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ABSTRACT

Two related questions are investigated in this research: (1) the characteristics which differentiate those schools which extensively use educational innovations from those which do not; and (2) the factors that determine whether innovation will be a carefully thought-out and discriminating process, rather than a process primarily influenced by (and incorporating) the latest educational fads and fancies. Most of the material in the report relates a variety of independent variables to adoption of innovations in schools in major cities. Separate sections of the study establish a typology of innovations with respect to both the quality of, and the frequency with which, specific types of innovations are implemented; discuss the school systems surveyed; examine several characteristics of schools such as student bodies, community involvement, and student morale; report investigations of the relationship between the availability of both physical and staff resources and the frequency with which innovations are adopted; discuss school structure in terms of both size and complexity; and, focus on individuals involved in the schools. The final section of the study includes a summary of major findings, a discussion of the implications of these findings for policy, and recommendations for future research. (Author/JM)

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FINAL REPORT

Grant No. OEG-0-72-1611

THE ADOPTION OF INNOVATION IN URBAN SCHOOLS

BEST AVAILABLE
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Margaret K. Nelson

Bureau of Applied Social Research
Columbia University
605 West 115th Street
New York, New York 10025

March 1975

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CHAPTER I

INTRODUCTION

Educators have been interested in the adoption of innovations since the 1930's. The research has taken many different forms and focussed on a variety of related areas: research and development of new educational products; dissemination and diffusion of knowledge and technology; processes during change; and characteristics of adopting individuals or organizations. It is the last of these interests which concerns us here.

Within this specific area of research there have been shifts in emphasis over the years. A major concern of the early studies was why schools were slow to adopt the products of educational technology. From data gathered in the 1930's Mort and Cornell suggested that there was a fifty-year gap between the "invention" of an educational innovation and its complete diffusion to schools.[1] Additionally, the investigations were guided by the assumption that "adaptation" was a necessary good, that schools should be aware of and responsive to advances in educational technology. For instance, in 1958 Mort wrote in his foreword to the revised edition of a compendium of over 150 research studies on this subject:[2]

> Adaptation in education is as essential as change in any other human endeavor. Technical knowledge of education and education processes has advanced just as technical knowledge in metallurgy and electrical generation has advanced. Schools that do not take advantage

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[1] P.R. Mort and F.G. Cornell, American Schools in Transition (New York: Bureau of Publications, Teachers College, Columbia University, 1941).

[2] Donald H. Ross, Administration for Adaptability (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1958), p.v.

of the best known tools and techniques can be supposed to be as inefficient as any other purposeful enterprise that does not utilize the best knowledge it can lay its hands on.

Since the publication of these seminal works, two changes have taken place. First, the change process seems to have become more rapid. This was noted by Miles in 1964,[1] and the fact that much innovation was actually occurring in schools was confirmed by Havelock in 1974:[2]

> A grand total of 3,185 innovations were spontaneously cited in all categories. . . . This represents an average of over nine innovations per district per year for schools representative of all regions and enrollment sizes throughout the United States. Even assuming zero innovativeness in the 147 non-responding districts out of the stratified probability sample of 500, this represents an absolute minimum rate of well over six innovations per district.

Nevertheless, Gideonse's report of four years earlier made it clear that at that time many schools (and students) were left untouched by innovation and that therefore there remained a need to identify schools more or less likely to incorporate new programs.[3] Still, educators became less concerned with "recalcitrance."

During the same period, a new concern developed about the quality of innovation. As federal funding boosted the research and development end of the innovation process, many new innovations became "available." Doubts about the worth of some of these led to growing concern with faddism in schools.[4]

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[1] Matthew Miles, "Educational Innovation: The Nature of the Problem," Innovation in Education, ed. Matthew Miles (New York: Bureau of Publications, Teachers College, Columbia University, 1964), pp. 6-8.

[2] Ronald G. Havelock, et al., Educational Innovation in the United States, Volume I: The National Survey: The Substance and the Process (Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, The University of Michigan, June, 1973), p. 11.

[3] Henrick Gideonse, Educational Research and Development in the United States (Washington, D.C.: U.S. Government Printing Office, 1970).

[4] Cf. Anthony G. Oettinger, Run, Computer, Run (New York: Collier Books, 1971); and Sam D. Sieber, "Organizational Influences on Innovative Roles," Knowledge, Production and Utilization in Educational Administration, eds. T. Eidell and J. Kitchell (Columbus, Ohio: University Council for Educational Administration, 1968), p. 120-142.

The high rates of adoption reported by Havelock, for instance, may represent substantial improvements in education but may also reflect a shotgun approac to change.

The possibility of faddism is particularly relevant when considering the level of innovation following the turmoil of the 1960's. During the 1960's the existence of a "crisis" in American education, especially urban education, became a matter of public knowledge. Many widely-read books detailed the problems of big city schools, as did the newsmedia. Students and parents protested conditions and teachers began to strike for new rights. Everyone came to know that many students were far behind appropriate reading levels and that the schools failed to interest or be "relevant" to the lives of their students. Dropout rates were high and everywhere there was a call for change.

The Black communities, riding on the crest of the civil rights movement, were particularly militant in their criticisms of what had been offered up till then in ghetto schools. Their claims of inadequate facilities -- books, buildings, teachers -- and substandard performance were largely substantiated. They demanded better education: integrated education in some cases, community controlled education in others.

Educators at many levels responded to this turmoil, and their responses were varied. In 1965 the government passed the Elementary and Secondary Education Act which endorsed and funded innovation on a large scale. School administrators acted as well. For instance, New York City experimented briefly with community control; the Boston School Committee reversed tradition and began spending more money per pupil in Black schools than in white ones;[1] and the

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[1] Martin T. Katzman, The Political Economy of Urban Schools (Cambridge: Harvard University Press, 1971).

National Association of Secondary School Principals authorized a major study of large city schools as a first step in understanding the problems.[1] And, perhaps, with funds available under Title I and Title III of the Elementary and Secondary Education Act administrators began to innovate in schools which had never before received shares of the goods and services of the new educational technology.

We place our study in this context of recent concern with education and the tradition of research in the field of innovation. We focus on two related questions. First, what are the characteristics which differentiate among those schools which extensively utilize educational innovations and those which don't; and second, what factors determine whether innovation will be a carefully thought out and discriminating process in which only the finest products are adopted, or whether it will be a process primarily influenced by (and incorporating) the latest educational fads and fancies.

In reviewing our data on the adoption of innovations in urban schools as of the 1969 school year (sample and sources described below) we have noted that the hypotheses and conclusions of much of the previous education research, although providing guides to important variables, do not help to explain many of our findings. In part this is because of a difference in unit of analysis. We focus here on individual schools (although we do look at school districts as a whole in our first substantive chapter) while many studies in the educational literature use the entire school district as the only unit of analysis.[2]

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[1] Robert J. Havighurst, Frank L. Smith and David E. Wilder, "A Profile of the Large-City High School," The Bulletin of the National Association of Secondary School Principals, XXV, 351 (January, 1971), pp. 3-5.

[2] For instance, Havelock, op. cit.; and Victor Baldridge and G. Burnham, The Adoption of Innovations: The Effects of Size, Differentiation and Environment (Palo Alto, California: The Stanford Center for Reeearch and Development in Teaching, 1973).

Also, we examine exclusively urban schools, whereas most of the studies mentioned above, as well as many others, use either national samples or schools in a clearly bounded geographical area.[1] Finally, to the extent that previous studies have failed to take account of pressures outside the system for change they have ignored at least one possible determinant of innovation.

In addition to the literature on innovation in educational institutions we draw on the general field of organizational literature surrounding the adoption of innovations. This literature has been useful in pointing our analysis to key factors which determine rates of adoption in a wide variety of organizations. Hypotheses about the relation of such variables as type of client, organizational size, morale, complexity and the personal/professional characteristics of the organization staff have directed much of our search for explanations and helped us explicate our findings. At the same time, a number of specific characteristics of schools distinguish them from most other bureaucratic organizations. We consider two of these characteristics below because of their importance in our analysis.

First, schools are public, locally controlled organizations and as such are targets for community pressure. One important consequence of this vulnerability may be a defensive stance on the part of the organization and resistance to change initiated from outside.[2] Also, the adoption of specific innovations may be influenced by political feasibility as much as educational value. Even if a school is open to change as a general proposition, as Sieber has suggested, "changes in practice that run the risk of disturbing local communities are eschewed."[1] Adminstrators under intense public scrutiny may be more concerned with the gross number of innovations being introduced in different schools than either educational value or political feasibility per se. While officials of private organizations may choose to innovate because of a perceived potential for greater profit or efficiency, school administrators have to contend with other concerns. Innovations can be viewed as "goods" or social assets; the general public is favorably impressed by innovation. Thus school administrators may feel compelled, particularly in times of concern with equal opportunities, to distribute the "goods" fairly throughout a school system.

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[1] E.g., Havelock, op. cit; Baldridge, op. cit.; and Richard O. Carlson, The Adoption of Educational Innovations (Eugene, Oregon: University of Oregon Press, 1965).

[2] This possibility is suggested in Matthew Miles, "Some Properties of Schools as Social Systems," Change in SChool Systems, ed. Goodwin Watson (Washington, D.C.: National Training Laboratories, National Education Association, 1967), p. 14.

A second major difference between schools and many other oganizations is that schools process people, not inanimate objects. People can react, talk back, fight and otherwise have an effect on the internal climate of the organization. Student morale may be as important a factor as staff morale with respect to the innovation process. Also, because not all students are the same, the decision to introduce an innovation should be determined by whether it is appropriate given the type of student enrolled in the school. While other organizations must also make decisions about the applicability of specific innovations, in schools these decisions are particularly crucial. Thus we consider the type of student enrolled in a school (as defined by race, socioeconomic status and academic ability) to be major variables in this analysis.

In the study that follows we spell out more thoroughly some of the themes considered only superficially here. The remainder of this Introductory chapter is divided into a discussion of our dependent variable, the methods of data collection, the population under consideration, and a schematic outline of the organization of the report.

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[1] Sieber, op. cit, p. 128.

METHOD

The research which follows is based on data obtained from a variety of sources. The bulk of the information was collected by the National Association of Secondary School Principals in 1969. The remainder was collected at a later time by the author in a series of four smaller surveys.

The impulse behind the collection of additional data was the need for information which we felt was vital to the investigation of the problem at hand. Thus, although the research is basically a secondary analysis of previously collected data, we attempted to circumvent some of the standard problems of a secondary analysis by filling in foreseeable gaps in the data. (Naturally, as the analysis proceeded, new needs became evident which could *not* be filled.)

The additional four surveys were not initiated until the Fall of 1972 and some questionnaires were not returned until the summer of 1973, over four years after the NASSP began its collection of data. Questions in the supplementary surveys to the Principals, Superintendents and Central Offices were phrased in a retrospective manner. The validity of the responses therefore depends to a great extent on the memories of the respondents. The time lag also meant that many people had moved, retired or left their jobs for other reasons, greatly reducing the response rate.

NASSP Study

In 1968 the steering committee for the Large-City Schools Study of the NASSP, chaired by Robert J. Havighurst, decided to undertake a descriptive study of the high schools in all American cities over 300,000 (based on 1960 census data). Of the 45 cities so identified, all except Oakland cooperated.[1] There were approximately 800 schools in the cities being studied and data was obtained from the Principals of 670 of them, an extraordinarily high response rate. These 670 schools comprise the population being studied here.[2]

To begin the research, a letter was sent to the superintendent of schools in each of the forty-five cities, soliciting his cooperation and that of his associates in the research undertaking. Once the cooperation of the superintendent of schools in each of the cities had been obtained, questionnaires were mailed to the appointed liaison staff members for distribution to the high school principals. The questionnaires reached the principals late in the 1968-69 school year and by early October, 1969, the 670 responses had been returned.[3]

The questionnaire obtained material about the following general topics: General School Information; General Personnel Information; Teaching Personnel; Administration-Supervision; Student Personnel Services; Student Enrollment, Attendance and Records, Instructional Program; Student Activity Program; School-Community Relations; Cultural Enrichment; School Physical Facilities; Instructional and Organizational Practices.[4]

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[1] Because of conditions prevailing at the moment, it was not possible for Oakland to participate. Hence, the data to be presented are based on information provided by the schools in 44 cities.

[2] Further discussion of the population can be found below, p. 13.

[3] A further description of survey procedures can be found in Robert J. Havighurst, Frank L. Smith and David E. Wilder, "A Profile of the Large-City High School," The Bulletin of the National Association of Secondary School Principals, 55, 351 (January, 1971), pp. 9-10.

[4] The complete NASSP questionnaire is reproduced in Appendix A.

Survey of Principals

In order to obtain personal and professional information pertaining to the principals of the 670 schools under study, a questionnaire was developed during the spring of 1972 and, after receiving USOE approval, mailed that fall. The cover letter of the questionnaire was addressed to the individual who had been principal in the school during the time of the original NASSP survey and requested that he personally complete the form and return it. With the first responses, numerous problems became apparent. In many cases the present principal, misunderstanding our instructions, completed the questionnaire himself, requiring us to send a new questionnaire with instructions that it be mailed to the previous principal. In other cases the schools simply indicated that the principal had retired or moved to another job and returned the questionnaires to us. We then returned the questionnaires with a new request that it be forwarded to the 1968-69 principals.

Several weeks after the first mailing, a follow-up questionnaire was mailed to all principals who had not responded initially and several weeks later a second follow-up was mailed.

The total number of questionnaires received from these three mailings (the original and the two follow-ups) was 377 or 56% of the total. In early 1973 an abbreviated questionnaire was mailed to all remaining non-respondents asking for the reason why they did not respond to the original two letters and their age, sex, degree of education and present employment.[1] One hundred of these shorter questionnaires were returned (slightly over 1/3 of the non-respondents), enabling us to do a rudimentary analysis of the differences between those who returned and those who did not return questionnaires. (Cf. Appendix F.) Out of the remaining 293 principals, % were lost to us because they were deceased, or otherwise could not be located by the schools. Non-responses of the remaining % are left unexplained. However, because a sizeable proportion (%) of those responding to the short form gave as a reason for non-response the fact that the original questionnaire had never been received, we assume that in many of the other cases of non-response the same was true.

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[1] The abbreviated questionnaire, the original Principals' questionnaire and the cover letters are reproduced in Appendix B.

The questionnaire asked for personal and professional information from the principals as well as information regarding their administrative style (e.g., number of meetings held with teachers and administrative staff) and their relations with the central office of their school system. The questionnaire also asked how many innovations on the list which comprise our dependent variable had been introduced by the principal during his tenure. This information was used to define a rate of innovation for each principal which is described below (cf. dependent variable discussion, p. 15) and in Chapter VIII.

All questions asked of principals (except that asking for present employment) referred to the 1968-69 school year. Principals rarely responded that they could not remember the necessary information (although this was a reason given for non-response on the short form). We assume that in many cases it was difficult for the principals (particularly those who were still employed in the same position) to accurately distinguish one year in the past from others and that therefore the responses must suffer in terms of their validity. However, as there was no way for us to validate these answers, we can only take this possibility into account in terms of the extent to which we make definitive statements of our results.

Survey of Superintendents

In the spring of 1973 a brief questionnaire was mailed to the superintendents of the forty-four school systems included in the study.[1] As was true of the principals' questionnaires, these were to be completed by the 1968-69 job occupants and requests were made that the central office forward the questionnaire to any superintendents no longer there. The same type of problems arose with the survey of Superintendents as with the survey of Principals. Occasional questionnaires were completed by current job occupants and had to be remailed, and in several cases schools returned questionnaires without forwarding them.

By the summer of 1973 we had received twenty-two valid responses, a return rate of 50%. Of the 22 non-responses two superintendents were deceased, one refused to cooperate and one was listed by his school as being "not available." Non-response of the remaining 18 superintendents is left unexplained.

The Superintendent's questionnaire asked only for personal and professional data and did not require as much retrospective material as did the Principal's questionnaire.

Survey of Central Offices

Accompanying the questionnaire to the Superintendents was a brief factual questionnaire to be filled out by a member of the Central Office administrative staff.[2] This questionnaire asked for information about the structure of the central office, desegregation actions, teachers' unions, and distribution of monies. This data is used primarily in Chapter III, below. Responses were received from 26 of the school systems. In general, these responses came from the same school systems in which the superintendent had cooperated with our study. No explanation was offered by the other systems for non-response.

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[1] This questionnaire is reproduced in Appendix C.

[2] This questionnaire is reproduced in Appendix D.

Survey of Experts

In the Spring of 1973 a rating form was mailed to 13 judges, members of a national panel on secondary school education convened by the U.S. Office of Education, through the office of the Chairman of the panel.[1] By the fall of that year, seven questionnaires had been returned. A follow-up letter brought in two more questionnaires bringing the total to nine, or approximately 70% of the panel. Three of the remaining four panel members explained their non-response: one panel member responded that he never participated in such surveys, another felt that he was not qualified to judge the innovations; and the third was too ill during that period to devote careful consideration to the questionnaire.

The questionnaire listed the innovations which comprise our dependent variable and asked the judges to rate them along five criteria: Quality, Administrative Difficulty of Implementation, Durability, Type of Student, and Type of school for which the innovation would be most appropriate. The information thus obtained is described thoroughly in Chapter II and Appendix G.

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[1] This questionnaire is reproduced in Appendix E.

THE POPULATION

The original goal of the NASSP was to collect data which would lead to a better understanding of the nature of large-city schools. They selected for inclusion in their study only cities with populations of over 300,000 as defined by the 1960 census, and the schools within them. As we mentioned above, all of the cities so identified (with the exception of Oakland) cooperated with the study and information was gathered from 670 of the possible 800 or so schools. Our study which is based on this data therefore does not rest on a probability sample but on an entire universe of schools. The conclusions we reach can only be generalized to other populations with extreme caution since there are many ways in which the population of schools under consideration here is distinctive. Most importantly, the external or community environments of these schools are radically different from those found in most other American communities. Also, very few school districts are as large (or as diverse) as those in urban areas and very few of the schools in this country are as large as the schools contained in these districts. Therefore one can conclude that the internal or organizational environments in these large-city schools will also be noticeably different.

At the same time it is important to emphasize the extreme variation among the cities included here. Twenty-eight states (including Hawaii) as well as Washington D.C. are represented by the cities under consideration and they cover every region of the country. Moreover, among these cities there are great variations in size, racial composition of the population, mean per capita income, etc. And the schools within these cities vary as well in type of student enrolled, admission procedures, organizational characteristics, etc. Therefore, although the fact remains that the data here is not to be read like data deriving from a statistical sample, it is also true that many of the characteristics of the cities and schools we consider relevant in our analysis can be found in other types of cities and perhaps in suburban and rural areas as well. Major cities are not the only location for racial conflict and concern with the quality of educational opportunity. And with the trend in educational administration being that of combining a number of smaller districts into large ones, there may soon be many school districts which will have to make decisions pertaining to administrative decentralization and how best to meet the needs of large, diverse student populations.

DEPENDENT VARIABLES

Our major dependent variable is a score given to each school based on the number of innovations which were actually in use as of the 1968-69 school year. The question which serves as our measure of use of an innovation is shown below. Option 1 was the criterion for use.

> Many urban secondary schools are developing new practices in an attempt to improve the effectiveness of the schools. Listed below are some of those practices. For each practice, please indicate the extent to which the practice has been given some attention within your own school, by using the alternative responses defined below.
>
> 1. IN USE - fully implemented as a regular feature of the program or currently being used on a trial or pilot basis
> 2. PLANS - definite plans have been made for implementation, including allocation of materials and/or personnel
> 3. UNDER STUDY - currently or recently considered in terms of feasibility by an officially designated group within the school
> 4. REJECTED - study has been completed and a decision not to implement the practice has been made
> 5. DROPPED - practice discontinued after a trial or pilot project
> 6. UNKNOWN; NOT CONSIDERED - practice is unknown or was never considered seriously

A total of thirty-two practices were listed in the original NASSP study of which 17 were selected for our index. The selection of only approximately half of the total list of innovative practices was guided by a decision to limit our index to practices which were related to curriculum or instruction for secondary school students. Twenty-one of the innovations fell into this category of which four were omitted because they related to special types of student bodies (e.g., bilingual education, honor study hall) or because they described a specific course rather than an instructional technique (e.g., humanities course). The remaining 11 innovations were either community services or non-educational (e.g., breakfast program, maternity program, expanded guidance services).[1]

Scores for the schools on this variable of "innovativeness" ranged from 0 to 14 with a mean of 4.6. The entire distribution is shown in Table I.1A. (The specific items comprising this variable along with the percentage of schools adopting each innovation are presented and dicussed in Chapter II.) For purposes of analysis in later chapters we dichotomize and/or trichotomize this variable as is shown in Table I.1B and I.1C.

A variety of other dependent variables are used in the analysis which follows. In Chapter III when we discuss the school systems as single units rather than focussing on individual schools we use a mean score which is further described below. And in the discussion of the personal and professional characteristics of principals we use as our dependent variable a rate of innovation (i.e., number of innovations introduced divided by the number of years as tenure as principal).

Three further dependent variables -- the proportion of innovations adopted which are of "high quality," the proportion of innovations adopted of "high cost" and the proportion of innovations adopted which are difficult to implement -- are also used to help describe the style of adoption in different types of schools. All of these variables are described at length in Chapter II.

A fundamental and persisting problem in the study of the adoption of innovations is that research is usually confined to adoption rather than to actual use of innovations. Since schools readily report the adoption of a number of

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[1] The complete list of innovations as presented in the NASSP survey can be found in Appendix A, p. 32. Schools which are high on the variable of innovativeness (measured by the 17 items) have high rates of adoption of use on the other 15 items which were asked about in the NASSP questionnaire: the correlation between the two indices is .47.

TABLE I.1

DISTRIBUTION OF SCHOOLS

BY NUMBER OF INNOVATIONS IN USE

A:. Entire Distribution of Schools on Innovation Variable

Total Number of Innovations in Use	Percent of Schools	Number of Schools
None	5 %	31
1	9	56
2	15	95
3	13	81
4	13	84
5	11	69
6	10	61
7	9	55
8	5	32
9	4	27
10	3	20
11	1	9
12	2	11
13 or more	1	6
	100%	637

B: Dichotomous Categories for Innovation Variable

Number of Innovations in Use	Percent of Schools	N
Low (0-4)	54%	347
High (5 or more)	46	290
	100%	637

C: Trichotomous Categories for Innovation Variable

Number of Innovations in Use	Percent of Schools	N
Low (0-2)	29	182
Medium (3-5)	36	234
High (6 or more)	35	221
	100%	637

practices which have not been preserved or fully incorporated into their programs, the study of sheer adoption yields ambiguous results. A major conclusion of a national study by Goodlad, Klein, et al., who actually observed practices in schools, is that personnel exaggerate the adoption rate of their schools. As reported by Goodlad, et al.:[1]

> They claimed individualization of instruction, use of a wide range of instructional materials, a sense of purpose, group processes, and inductive or discovery methods when our records showed little or no evidence of them.

The issue of whether our measure of utilization of an innovation is a valid one naturally arises. As noted earlier, the question in the questionnaire specified that innovations were to be regarded as "in use" if they were "fully implemented as a regular feature of the program or currently being used on a trial or pilot basis." Innovations which were checked as "planned," "under study," "rejected" or "dropped" were not considered as being in use for purposes of our investigation. Thus the provision of a number of alternatives to full implementation or use on a trial or pilot basis might be expected to have increased the validity of this measure. In addition to this consideration of internal validity, we have a moderate measure of external validity as well which is described in Chapter II.

Another issue is whether the adoption or use of innovations within a school actually represents a real change in the school or whether innovations can be implemented on a piecemeal basis without any other fundamental restructuring taking place. If innovations are being used but no other changes are taking place then our study is limited to being an analysis of the use of innovations alone and not an analysis of what conditions make for or inhibit a more generalized climate of innovation or change. In fact, however, we find that there is a very strong relationship between adoption (use) of innovations and the occurrence of other types of change in the schools. Two questions in the NASSP questionnaire asked whether fundamental changes were taking place in the school. The first of these asked whether there had been changes in the manner in which the *curriculum* was organized. As we can see in Table I.2 schools which responded that there were changes *in either direction* were more innovative than schools which reported no changes. Similarly, schools which reported that the *priorities* in the schools had changed within the past five years were more innovative than schools reporting no changes (Table I.3).

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[1] J. Goodlad, et al., Behind the Classroom Door (Worthington, Ohio: Jones, 1970), p. 72-73.

Finally, we also have evidence that schools which adopt educational innovations are more likely to be *responsive* to the needs of particular subpopulations. The questionnaire asked about the presence in each school of four distinct types of students with unique needs: 1) advanced or gifted students; 2) students speaking English as a second language; 3) physically disabled students; and 4) students who are retarded in reading. For each group the questionnaire also elicited information about whether the schools were meeting the needs of the students through a special program; e.g., remedial language arts, physical education for the disabled. Each school in the sample was given a score created by finding the *percentage of types* of subpopulations whose distinct needs were being met by the schools. Schools reporting the presence of only one special type of student body received a score of 100% if they had a special program and 0 if they did not. Schools with two distinct subpopulations received a score of 100% if they met both needs, 50% if they met only one, 0 if they met none, and so on.

Seventy-six percent of the schools (510) reported that they had in

TABLE I.2

RELATION OF CURRICULUM CHANGE TO USE OF INNOVATIONS

Generally speaking, the curriculum is organized in one of two ways: 1) by separate subjects; or 2) by broad fields which include several subjects, e.g., separate course in history and geography vs. social studies classes combining history and geography; separate classes in art, music and literature vs. humanities classes. What is the trend of practice in your school?	Percent High On Innovation (More than 4)	(N)
Changes chiefly in the direction of singling out distinct subjects	50%	(188)
Changes chiefly in the direction of combining separate subjects	62%	(96)
No marked changes in either direction	39%	(310)

TABLE I.3

RELATION OF PRIORITY CHANGE TO USE OF INNOVATIONS

To what extent has the set of priorities for your school changed in the past five years?	Percent High On Innovation (More than 4)	(N)
To a very great extent	60%	(56)
To a great extent	43%	(135)
To some extent	46%	(326)
Very little or not at all	37%	(94)

attendance one or more of the subpopulations described above. Of these 510 schools 27% were less than totally responsive to the subpopulation needs, i.e., that did not have special programs for at least one subpopulation attending the school. These schools which were less responsive to the needs of students also had lower innovation rates than those schools which responded to the needs of each subpopulation: 45% of the former group had high rates of innovation as compared to 55% of the latter group. Thus we can see that innovativeness as described by our dependent variable is related to responsiveness in a school and thus may reflect a more adaptive climate.

In spite of this variety of checks on our dependent variable, it is quite evident that problems exist. For instance, we have no way of knowing how extensively the innovations are actually used in any particular school. Teaching teams for one school may mean a concerted effort to employ this program in most applicable cases; in another school it may mean only one teaching team, or the use of teams in only one type of course. Similarly, we do not really know whether the principals employed similar definitions of the innovations. Although definitions were provided in the questionnaire (cf. Appendix A), these definitions were rather loose and may have been interpreted differently by different principals. Therefore television instruction may mean entirely different things in different schools.

Finally, and perhaps most importantly, our dependent variable is composed of a very short list of innovations. Hundreds of educational innovations exist which were not included in our list. Therefore, it is possible that at least some of the schools which received a low score were adopting many different innovations or in other ways introducing major change. At present we can see no way around this problem.

ORGANIZATION OF THE REPORT

The bulk of the material in this report is gathered around our investigation of the relationships between a variety of major independent variables and the adoption of innovations in schools in major cities. However, we do not begin this investigation per se until Chapter IV as there are two important preliminary tasks. The first of these, which we undertake in Chapter II, is a discussion of the innovations which comprise our dependent variable and the establishment of a typology of discrimination which, in subsequent chapters, enables us to consider not only the number of innovations in use but the quality of innovations adopted and the frequency with which specific types of innovations are implemented. It is in this first chapter that we begin to develop the notion that the adoption of innovations may often have a social function, a conclusion which emerges from an examination of the relationships between various characteristics of the innovations and the frequency with which they are implemented in this population of schools.

In Chapter III we consider the school systems as single units in order to emphasize the necessity of later examining individual schools rather than districts by documenting the range of innovation scores within each district, and in order to introduce certain important variables which can only be considered on a school district level -- e.g., central office organization, superintendent's characteristics. A major explanatory variable -- the racial composition of the city -- emerges in this analysis.

Thus it is not until Chapter IV that we begin to look intensively at the schools themselves, first with the characteristics of the student bodies and then with the more dynamic variables of community involvement and student morale. Our major questions are: 1) to what extent is the adoption of innovation determined by the type of student (as defined by race, socioeconomic status and academic ability) enrolled in the school; 2) is community involvement related to the adoption of innovation, and if so, what effect does it have on the quality of innovations adopted; and 3) to what extent do internal climate features (morale, order and safety) determine whether or not innovations are introduced in a school.

In Chapter V we turn to an investigation of the relationship between the availability of resources -- both physical resources and staff resources -- and the frequency with which innovations are adopted. One concern is whether the low rates of innovation in particular types of schools identified in the previous chapter can be explained by a lower level of resources. Another major question is whether the adoption of a high proportion of costly innovations is associated with more adequate resources and further whether this relationship has an effect on the quality of innovations adopted in the "richer" schools. Also we consider here the interrelationship between internal climate features (introduced in Chapter IV) and the physical characteristics of the plant and the availability of teachers.

In the first two portions of Chapter VI we expand our consideration of school structure by examining the relationships of size and complexity to the adoption of innovations. School complexity is defined here in three ways: 1) the complexity of the nature of the task assumed by the school, 2) the number of grade levels included in the school; and 3) the variety of scholastic programs. A particular focus in this part of the chapter is on those innovations which the judges rated as being difficult to implement.

The second portion of Chapter VI concerns issues of vertical rather than horizontal differentiation. Here we consider the distribution of decision-making authority. An important variable introduced in Chapter II -- decentralization -- will be reintroduced here as a control variable.

Finally, in Chapters VII and VIII we turn back to a consideration of the individuals involved in the schools. We first explore the relationship between the characteristics of the staff -- both personal and professional -- and the rate at which innovations are adopted. We then consider the principals of the schools, and examine the effect of their background and training on the rate at which they introduce innovations in different types of settings.

Our last chapter includes a summary of our major findings, a discussion of the implications of these findings for policy, and our recommendations for future research.

CHAPTER II

THE INNOVATIONS

In the course of making an administrative decision to adopt a specific innovation many factors may be considered. Among these are the characteristics of the innovation itself. The adopting agency -- whether we conceive of it as a single individual such as an administrator, the department of an organization concerned with research and development, or the entire organization -- will want such information as the following: how much the innovation costs, how worthwhile it is in relation to organizational goals, and the degree adoption will disrupt normal operating procedures. Presumably, the adopter will weigh these and other items of information (whether or not he has adequate data) against each other and against other factors unrelated to the characteristics of the innovation itself: e.g., the amount of money in the budget and the extent of pressures for and against change in the organization. Ideally the final decision is an educated one, involving careful consideration and evaluation of all factors. In fact it is likely that in many cases the decision to adopt an innovation is more haphazard, particularly since the necessary information for making an educated decision may not be available. Administrators may not be able to obtain accurate or complete data on either the cost or the quality of a specific innovation. And the assessment of the extent to which the innovation will involve administrative adjustments may well be superficial. Nevertheless, it seems reasonable to assume that cost, effectiveness and organization impact are three of the prime factors that determine adoption.

In this chapter we examine these three characteristics of innovations and explore their relationship to the frequency with which the seventeen innovations comprising our dependent variable are in use. In addition, we will examine the likelihood that the innovation will be installed as designed, i.e., the variable of "durability." Each of these variables is explained more fully below.

Our discussion is intended to serve three purposes. First, it will provide general information about the extent to which characteristics of innovations are related to frequency of use. As we will see below, several of the characteristics are highly related to use and an analysis of these relationships helps to shed light on adoption processes. Second, the discussion offers specific information about the seventeen innovations themselves which may be of use to educators considering their adoption. This information was obtained from a survey of experts in the field of education. (See Appendix E for a detailed description of this survey.) We would suggest that such information is badly needed for all innovations if educators are to make intelligent decisions when considering their adoption. Finally, from the point of view of this study alone, the characteristics of the innovations as defined in this chapter are used later in our analysis as variables which allow us to consider, not only frequency of use, but how well or thoughtfully the adoption process is handled. For instance, by computing the proportion of high quality innovations adopted, we will be able to classify schools according to their "discrimination." We can then move closer to answering such questions as whether pressures to innovate -- be they from a sudden increase of governmental funds or from parent involvement in the schools --leads to less discriminating adoption. The problem of faddism in education has been noted by a number of authorities, but thus far researchers have failed to measure this factor. Similarly, we can consider factors affecting the degree to which schools adopt innovations which entail major restructuring of administrative routines, and factors affecting the adoption of innovations which are costly.

In the discussion below we first explain our measure of frequency of use and each of the four characteristics of the innovations, and then turn to an analysis of relationships among these characteristics.

MEASUREMENT OF VARIABLES

Frequency of Use

The first item of information we have for each of the seventeen innovations is use as described in our Introduction. In Table II.1 we present the rank order of innovations according to frequency of use. The innovations range from use in 67% of all schools (language laboratories) to use in only 2% of the schools (optional attendance). Only one of the innovations is used in over half of the schools, while six of them are used in less than a quarter of the schools.

Simple inspection of the rank order of frequencies does not offer any immediate explanation for this position of the innovations. In particular, those most frequently in use are not noticeably older than the others. As we shall see below, however, use is clearly related to certain of the factors mentioned earlier.

In the following analysis we will show how the various characteristics of the innovations are related to, and presumably affect, the frequency with which they are adopted by the schools. When using frequency of use as a variable we divide the innovations into two groups: High Use -- the innovations used in over 25% of the schools; Low Use -- innovations which are used in 25% or less

TABLE II.1

PERCENT OF SCHOOLS USING EACH INNOVATION

Innovations	Percent of Schools Which Use the Innovation	(N)
Language Laboratories	67%	(652)
Instructional Material Center	47%	(640)
Teaching Teams	41%	(651)
Resource Center	39%	(644)
Television Instruction	36%	(653)
Independent Study	29%	(640)
Back-to-Back Scheduling	29%	(641)
Directed Study	28%	(638)
Simulation or Gaming	25%	(634)
Non-graded Program	25%	(643)
Programmed Instruction	21%	(642)
Continuous Progress	19%	(635)
Teaching Machines	16%	(645)
Flexible Scheduling	15%	(646)
School-within-School	11%	(641)
Telephone Amplification	7%	(652)
Optional Attendance	2%	(642)

Note: The base numbers vary because not all schools responded to questions for each item. As there was no way to distinguish between those not responding at all and those not responding because they used this means of indicating that they had not considered the innovation, we use the number of valid responses as the base.

of the schools.

Cost

One factor which is almost certain to be considered by an adopting agency is the cost of implementation. As has been suggested in other studies, innovations which cost money may be adopted at a slower rate than those which do not cost money.[1] We want to know the extent to which cost is related to use (as opposed to adoption alone) as well as to the other characteristics of the innovations in our sample.

Our measure of cost is our own assessment, since reliable information of the cost of educational innovations is not available. For several reasons, assessing the cost of innovations in an accurate way poses serious problems. First of all, cost is very much dependent on the extensiveness of the innovative program: twenty teaching machines cost more than two or three; wiring a large school for telephone amplification costs more than wiring a smaller one. Second, all of the innovations require some expenditure of time, which means that all of the innovations cost something. For instance, to reorganize the scheduling of classes to allow for back-to-back or flexible scheduling might take many man-hours of administrative time. How much time each program would take, however, is a variable we have no way of measuring here. Third, there is the question of when you stop measuring cost. Some innovations are expensive in the beginning but not later (initial vs. continuation cost.)

Closely related to these issues is the additional one of reversability. Once a school has acquired the necessary equipment for an innovation, they may be loath to drop it regardless of success. The purchase of the equipment places constraints on reversing the decision. This is not true of innovations which merely require the time of personnel. In most systems time is less tightly budgeted and superintended than money.

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[1] Matthew Miles, "Innovation in Education: Some Generalizations," Innovation in Education, ed. Matthew Miles (New York: Bureau of Publications, Teachers College, Columbia University, 1964), pp. 635-66.

Because of these various problems we could find no totally sufficient way to assess the relative cost of the innovations. The measure we finally selected is a simple dichotomous one: whether or not the implementation of the innovation requires a purchase of equipment and therefore an initial outlay of cash. If new equipment is required the innovation will be regarded as a "high cost" innovation. This measure is, of course, closely tied to the issue of reversability discussed above. Specifically, it may have a different relationship to actual use in schools than it would to mere adoption since schools which adopt such innovations might be more likely to retain them over time.

Seven of the total list of seventeen innovations are designated as "high cost" innovations according to the simple criterion described above. They are: Television Instruction, Programmed Instruction, Teaching Machines, Language Laboratory, Instructional Materials Center, Resource Center and Telephone Amplification. In later chapters we will use as one of our dependent variables the proportion of "high cost" innovations adopted in a school.

Quality

Our measure of the quality or educational worth of the innovations is derived from the survey of experts described in Appendix E. Briefly, the judges were asked: "Indicate what you believe to be the educational worth of each innovation when properly installed from (1) low to (5) high." The judges' ratings were averaged and each innovation was given a single mean score. In three of the cases there was very low consensus among the judges (i.e., standard deviation of judges' ratings was over 1.0). These three innovations -- Telephone Amplification, Back-to-Back Scheduling, School-within-School -- are therefore omitted in our analysis below when we consider the variable of quality. We did not put them in a middle group because in each case the score was relatively low (see Table II.2).

The scores for the innovations ranged from 4.8 (continuous progress) to 2.6 (optional attendance). The overall mean is 3.9 which indicates that, on the whole, the judges felt that the innovations under consideration were of some worth and could be of value when properly installed. We must remember, however, that the judges were probably considering these innovations with reference to each other and may not have compared them to other innovations.

The entire range of scores is presented in Table II.2. In our analysis below we use the score of 4.2. as the lower limit for our division into high and low.

In later chapters we will use a typology which derives from our quality scores. Using the same cutting point as above we compute the proportion of high quality innovations which are in use. By dichotomizing this variable and crosstabulating it with the total number of innovations adopted, we achieve a four-fold classification which can be used to describe the extent to which schools discriminate in their adoption of innovations. Each of the cells (in Table II.3) is given a shorthand name which we describe below.

1) Pacesetter: 22% of all schools fall into this cell. These schools are high on both adoption and the proportion of innovations adopted which are of high quality indicating that they are leaders in innovating among the schools, and, moreover, leaders with discrimination.

2) Selective: 14% of all schools fall into this cell which indicates a

TABLE II.2

QUALITY SCORES AND STANDARD DEVIATIONS FOR EACH INNOVATION

Innovations	Quality Score	Standard Deviation
Continuous Progress	4.8	.44
Resource Center	4.7	.47
Independent Study	4.6	.49
Instructional Material Center	4.4	.93
Directed Study	4.4	.52
Teaching Teams	4.2	.88
Non-graded Programs	4.2	.92
Language Laboratory	4.1	.99
Flexible Scheduling	4.1	.87
Stimulation or Gaming	3.9	.87
Programmed Instruction	3.8	.92
Back-to-Back Scheduling*	3.7	1.24
Teaching Machines	3.6	.69
School-within-School*	3.6	1.17
Telephone Amplification*	2.8	1.03
Television Instruction	2.6	.85
Optional Attendance	2.6	.83

*These are the Low consensus innovations omitted from our analysis below.

TABLE II.3

TYPOLOGY OF DISCRIMINATION

Total Number of Innovations Adopted	Proportion of Innovations Adopted Which are of High Quality	
	HIGH (51% to 100%)	LOW (0 to 50%)
HIGH (5-14)	Pacesetter	Faddist
LOW (0-4)	Selective	Backward

careful slection of innovations. These schools adopt fewer innovations than the "pacesetter" group but are equally discriminating in their adoption procedures.

3) Faddist: These schools, which comprise 24% of the total sample, are highly innovative but lack the discrimination of the pacesetter and selective groups. One suspects that the adoption process is carried out under a great pressure to innovate (perhaps through a sudden increase in resources for innovation) which does not allow for the careful consideration of available alternatives.

4) Backward: 40% of all schools have low innovation rates and are indiscriminate in their selection of innovations. These are the schools which, presumably, lack both the resources to innovate and the commitment to make the innovation process a meaningful one.

In later chapters we will explore some of the variables which determine the type of innovation process which occurs in the schools in our sample.

Administrative Difficulty

A second question in the rating form sent to the panel of experts asked each individual to assess the administrative or organizational impact of the innovation: "Indicate whether you believe implementation of the innovation to entail -- 1) major administrative difficulties; 2) minor difficulty; 3) a positive contribution to administration." This question was designed to allow us to assess the extent to which a school would find that the introduction of the innovation would entail administrative adjustments so that we could see what types of schools were able to overcome such problems. The mean scores for the innovations ranged from 1.6 for innovations which would entail major administrative problems (non-graded program and flexible scheduling), to 2.9 for innovations which could be implemented without any threat to the administrative machinery (language laboratory and simulation or gaming). The entire list of innovations with their scores and standard deviations is presented in Table II.4. Clearly the innovations which are most difficult to implement are those which demand that the central administrative structure of the school be modified to allow flexibility in the manner in which the students pass through the school, i.e. allocation of pupils. Those that can slip in easily are those which can be implemented on a piecemeal basis or in individual classes.

Durability

Information on a final characteristic of innovations was obtained to help determine the validity of our use index. As we mentioned in our Introduction, there are two major weaknesses of our index: 1) we don't know whether all schools mean the same thing by the innovation, or whether innovations are so greatly modified by the time they are implemented that they bear little or

TABLE II.4

ADMINISTRATIVE DIFFICULTY SCORES AND STANDARD DEVIATION FOR EACH INNOVATION

Innovations	Administrative Difficulty Score	Standard Deviation
Non-graded Programs	2.8	.44
Flexible Scheduling	2.8	.42
Continuous Progress	2.6	.47
Independent Study	2.6	.47
Teaching Teams	2.4	.47
School-within-School	2.4	.47
Television Instruction	2.3	.66
Programmed Instruction	2.2	.78
Optional Attendance	2.2	.63
Directed Study	2.1	.60
Back-to-Back Scheduling	2.1	.57
Teaching Machines	2.0	.81
Telephone Amplification	1.7	.63
Instructional Material Center	1.7	.42
Resource Center	1.7	.42
Language Laboratory	1.6	.47
Simulation and Gaming	1.6	.35

Note: Scores run from high to low with high indicating major administrative adjustments necessary for implementation.

no resemblance to their form in other schools or to their original design; and 2) we don't know how extensively the innovation is used in a school, e.g., whether language laboratory means one machine or twenty, and whether it is accessible to only a few students studying foreign languages or to all of them. The final characteristic was designed to help us deal with the first of these two problems. (The second problem unfortunately remains.) The panel of judges was asked: "Indicate your estimate of the chances that the innovation would be preserved as designed when implemented in a school." The judges were given three options: "1) low chance for preservation, i.e., innovation likely to be watered down when implemented; 2) medium chance for preservation; and 3) high chance for preservation as designed." The scores for the variable of durability (presented in Table II.5) ranged from a low of 1.6 (optional attendance) to a high of 2.9 (instructional materials center). The mean score was slightly higher than 2 indicating that, on the whole, there is a moderately good chance that these seventeen innovations are implemented in a manner approximating their original design. Furthermore, as we shall show in greater detail below when we look at the correlations between our scales, the fact that durability is highly correlated with use means that the innovations most often used (and therefore the innovations that most often make up an individual school's innovation score) are just those innovations which are most likely to be intensively implemented in a school.

TABLE II.5

DURABILITY SCORES

AND STANDARD DEVIATION FOR EACH INNOVATION

Innovations	Durability Score	Standard Deviation
Instructional Material Center	2.9	.03
Resource Center	2.8	.41
Language Laboratory	2.6	.49
Directed Study	2.6	.69
Simulation and Gaming	2.4	.49
Non-graded Program	2.2	.92
Teaching Teams	2.1	.57
Independent Study	2.1	.73
School-within-School	2.1	.57
Television Instruction	2.0	.66
Programmed Instruction	2.0	.47
Teaching Machines	2.0	.57
Flexible Scheduling	2.0	.81
Back-to-Back Scheduling	2.0	.57
Continuous Progress	1.9	.78
Telephone Amplification	1.7	.66
Optional Attendance	1.6	.49

ANALYSIS

Having described the four characteristics of the innovations, we now turn to an examination of the relationship of each to frequency of use and the intercorrelations of the characteristics. These correlations are shown in Table II.6. We will discuss each correlation as well as the variable of "cost" (along which the innovations cannot be given an interval score because it is dichotomous), illustrating our discussion with tables where relevant.

First, we note that there is a strong relationship between durability and reported implementation. The Pearson correlation is .73; the Spearman rank-order coefficient is .71; and the Kendall rank-order coefficient is .56. These are by far the highest correlations with frequency of use of any of the factors to be analyzed here, supporting our assertion that our use index is a valid measure of innovations actually and appropriately installed in the schools. There are several additional points we want to make about our measure of durability. First, the measures of durability and quality are very highly correlated. This indicates that perhaps the judgment of one is coloring the judgment of the other. Since we see no intrinsic relation between the two evaluations, it seems possible that the judges, when considering the quality of an innovation, occasionally slipped into their evaluation the consideration of the frequency with which the innovation actually took on a viable form when implemented.

Second, we do not really know why the judges felt that some innovations were less likely to be preserved as implemented than others; i.e., we do not know on what facts or assumptions they based their judgments. One consideration is that there is a slight negative relationship between durability and the degree of administrative difficulty entailed in implementation. That is,

TABLE II.6

INTERCORRELATIONS OF INNOVATION CHARACTERISTICS

Pearson Correlation Coefficients

	Quality	Administrative Difficulty	Durability
Percent Use	.34*	-.32	.73
Quality	--	.03*	.54*
Difficulty	--	--	-.46
Durability	--	--	--

Spearman Rank-Order Correlation Coefficients

	Quality	Administrative Difficulty	Durability
Percent Use	.34*	-.24	.71
Quality	--	.14*	.45*
Difficulty	--	--	-.36
Durability	--	--	--

Kendall Rank-Order Correlation Coefficients

	Quality	Administrative Difficulty	Durability
Percent Use	.28*	-.18	.56
Quality	--	.07*	.39*
Difficulty	--	--	-.19
Durability	--	--	--

*The correlations are based on 14 items (the rest are based on 17) because the three innovations for which there was low consensus on quality are omitted.

the judges were less likely to regard innovations which received high administrative difficulty scores as having a high chance for preservation. Clearly, to some extent at least, the degree to which an innovation entails administrative problems affects its chances for preservation.

Surprisingly, in general, innovations which require an initial outlay of money are slightly more likely to be used frequently in the schools in our sample than the innovations which do not entail an initial expense (Table II.7). Even if the positive relationship is doubtful (the Q coefficient is only .33), it is obvious that the expected negative relationship is not substantiated. There may be three explanations deriving from the relationships of high cost innovations to "durability," "quality" or "administrative difficulty." We will consider the first of these immediately and the latter two below as we discuss the relevant variables.

TABLE II.7

FREQUENCY OF USE BY COST OF INNOVATIONS

Frequency of Use	COST High	 Low
High (28%-67%)	Language Laboratory Instructional Material Center Resource Center Television Instruction	Teaching Teams Independent Study Back-to-Back Scheduling Directed Study
Low (2%-25%)	Programmed Instruction Teaching Machines Telephone Amplification	Simulation and Gaming Continuous Progress Flexible Scheduling School-within-School Optional Attendance Non-graded Program

There is the possibility that innovations that require capital outlays and purchase of new products represent an investment which schools are loath to negate. And since we are measuring implementation rather than mere adoption, our measure of use might reflect this sunken investment factor. However, when we observe the relationship between cost and durability (as judged by experts), we find a moderately negative relationship (Q = -.30). If we can rely on the judgments of the experts as to the extent to which each innovation is likely to be preserved, then the greater durability of costly innovations is an unwarranted assumption. Moreover, as we can see in Table II.8 only three of the innovations that cost an initial oulay were given high durability scores by the judges and two of these three were those which could most easily be implemented on a piecemeal basis: instructional material center and resource center. The logic here is probably that in many cases schools are not willing to make a major financial commitment to an innovation which is not reversable and therefore when they install ~~it~~ often do so on a minimal and perhaps meaningless basis.

TABLE II. 8

DURABILITY OF INNOVATIONS BY COST

	COST	
Durability	High	Low
High (28%-67%)	Language Laboratory Instructional Material Center Resource Center	Teaching Teams Independent Study Directed Study Simulation and Gaming School-within-School Non-graded Program
Low (2%-25%)	Television Instruction Programmed Instruction Teaching Machines Telephone Amplification	Back-to-Back Scheduling Continuous Progress Flexible Scheduling Optional Attendance

The quality of an innovation is also positively related to the frequency with which it is used in schools which may indicate that the low quality innovations -- if they are adopted at all -- are more frequently dropped after a trial program. When we look at the relationship between quality and frequency of use in Table II.9 we can see that the relationship is not a perfect one and that there are four deviations from the primary relationship. Two of the deviant cases result directly from our cutting points between high and low values of the variables; i.e., both non-graded program and language laboratory have scores which are immediately below the cutting points used, in the former case for the variable of frequency of use and in the latter for the variable of quality. The same is not true of the other two deviant cases: continuous progress is an innovation which is used infrequently in schools in spite of the fact that the judges assert that it is of high quality. And television instruction is often implemented in spite of its low quality rating and expense. Interestingly, both of the innovations which are used frequently but are rated relatively low on quality -- television instruction and language laboratory -- cost money and are well-publicized innovations. It is possible that their implementation is the result of pressures from those involved in the manufacture or marketing of the equipment or from groups who want their schools to have the newest innovations. Administrators anxious to show that they are innovative might also select these two because of their high visibility and publicity.

Overall, the quality of an innovation is negatively related to cost as can be seen in Table II.10 (the Q coefficient is -.54). Thus considerations of educational contribution cannot explain the relationship between cost and use. Of the six high cost innovations, only two -- instructional material center and resource center -- received high quality ratings. These are low

TABLE II.9

FREQUENCY OF USE BY QUALITY OF INNOVATIONS

	QUALITY	
Use	High (4.2-4.8)	Low (2.6-4.1)
High (28%-67%)	Instructional Material Center Teaching Teams Resource Center Independent Study Directed Study	Language Laboratory Television Instruction
Low (2%-25%)	Non-graded Program Continuous Progress	Simulation and Gaming Programmed Instruction Teaching Machines Flexible Scheduling Optional Attendance

TABLE II.10

QUALITY OF INNOVATIONS BY COST

	COST	
Quality	High	Low
High (4.2-4.8)	Instructional Material Center Resource Center	Teaching Teams Independent Study Directed Study Continuous Progress Non-graded Program
Low (2.6-4.1)	Language Laboratory Television Instruction Programmed Instruction Teaching Machines	Simulation and Gaming Flexible Scheduling Optional Attendance

risk innovations in that they do not entail fundamental restructuring of roles, etc., and they are both innovations which, as was noted above, can be implemented piecemeal (one can gradually expand the facilities. Therefore, they do not demand a large initial investment.

Turning to the variable of administrative difficulty, we can see that, as might be expected, it is slightly negatively related to use (Table II.11). Innovations which entail greater difficulty or adjustments are less frequently used than those that can be installed more easily. On the other hand, some innovations which are difficult to install are implemented quite frequently, which means that the degree of administrative adjustment that is necessary does not create an insuperable barrier to implementation.

TABLE II.11

FREQUENCY OF USE BY ADMINISTRATIVE DIFFICULTY

	ADMINISTRATIVE DIFFICULTY	
Use	High (2.2-2.8)	Low (1.6-2.1)
High (28%-67%)	Teaching Teams Television Instruction Independent Study	Language Laboratory Instructional Material Center Resource Center Back-to-Back Scheduling Directed Study
Low (2%-25%)	Non-graded Program Continuous Progress Flexible Scheduling School-within-School Optional Attendance Programmed Instruction	Simulation and Gaming Teaching Machines Telephone Amplification

Although administrative difficulty is not directly related to the quality of an innovation, it seems probable that it is a variable that intervenes between the judgment of an innovation's worth and the final decision to implement it. Both of the innovations which were used infrequently in schools but whose worth was rated as being relatively high also received relatively high administrative difficulty scores. In particular, continuous progress which was a deviant case in Table II.9, had an adjustment score of 2.6, and non-graded program, the borderline deviant case, had an adjustment score of 2.8. And, interestingly, one of the innovations which was used frequently but received a relatively low quality score -- language laboratory -- also received a low administrative difficulty rating (1.6), which suggests that its frequent, perhaps indiscriminate implementation may derive in part from the fact that, aside from its cost, it is relatively easy to implement.

Finally, administrative difficulty of implementation, as rated by the judges, is negatively related to cost, as seen in Table II.12. This suggests that the development of new practices requiring the purchase of new equipment or other resources has been successful in solving the problem of implementation. However, the fact that not all of these new products are high in educational value suggests that the problem of implementation may have been solved at the expense of developing practices of exemplary value. And it is also possible that the adoption of "easy" innovations has served as a token substitute for structural changes which promise greater educational impact, such as continuous progress, non-graded programs and directed study.

Another implication of the negative relationship between cost and Administrative Difficulty is that practitioners must often face a "trade-off" between financial expense and organizational effort. When one considers that the structural changes, such as directed study programs, are of higher quality than certain of the more costly, but easily implemented practices, then it would seem that the wiser course of action would be to expend organizational effort rather than money. Nevertheless, it appears that practitioners are constrained frequently to adopt expensive, low impact practices by the organizational problems posed by high impact practices.

TABLE II.12

ADMINISTRATIVE DIFFICULTY BY COST

Administrative Difficulty	COST High	Low
High (2.2-2.8)	Television Instruction Programmed Instruction	Teaching Teams Independent Study Non-graded Program Continuous Progress Flexible Scheduling School-within-School Optional Attendance
Low (1.6-2.1)	Language Laboratory Instructional Material Center Resource Center Teaching Machines Telephone Amplification	Back-to-Back Scheduling Directed Study Simulation and Gaming

The question still remains whether it is this negative relationship between cost and administrative difficulty that accounts for the more frequent use of costly innovations, since it is possible (as we have argued) that the frequent adoption of some high cost, relatively low quality innovations is due to their ease of implementation and transportability. However, this explanation is vitiated by the fact that of the two frequently used innovations of high cost and low quality, at least one -- television instruction -- is also given a high difficulty score. The adoption of such a "faddish" practice cannot be owing solely to its transportability.

Looking at the combination of variables we have been discussing, we note that there are two high cost innovations which are very frequently adopted and which are also high in quality, easily installed and likely to be preserved. These are resource centers and instructional material centers. It would seem reasonable to assume that the expense of these two innovations would be offset by the combination of their positive attributes. This leaves us, then, with only two high cost innovations whose relatively high popularity cannot be explained by either quality or ease of implementation: television instruction (in use in 36% of all schools) and programmed instruction (in use in 21% of all schools). We therefore suggest that it is the social function served by the adoption of these two innovations which accounts for their appeal.

In an atmosphere of public criticism of schools such as we described in our Introduction, it would be understandable if schools sought to implement practices which were highly visible and comprehensible to laymen. Television instruction and programmed instruction are practices of this kind. In contrast, continuous progress, directed study, simulation or gaming, and so forth, are relatively esoteric innovations, lacking equivalent producer sponsorship and publicity in the mass media. We will pursue this notion in the following chapters as we explore the relationship between a variety of independent variables and the number and type of innovations adopted in the schools.

CHAPTER III

We begin the substantive portion of our study of the adoption of innovations in urban high schools by examining the school systems as units rather than by focussing on individual schools. There are several reasons why we begin in this fashion. First, conceptually, it makes sense to start with the largest unit of analysis and work down to smaller units. By understanding what determines the general level at which an entire school system innovates we will be able to make more sense out of the determinants of innovation in the individual schools. Second, there are a number of variables which may be important to our analysis which can only be studied by looking at the school system in its entirety. Included among these are variables describing the cities in which the schools are located and the organization of the central office. Finally, we wanted to ascertain whether all schools in a city adopted the same number and type of innovations. Had this been the case our analysis would have had to stop at the level of cities and we would have been compelled to investigate only variables relating to cities with an emphasis on the structure and organization of the central office of the school system rather than examining differences between the individual schools in our sample. As we will see below, this was not the case. The schools within the cities varied widely in both the number and type of innovations adopted. At the same time, since there are also differences between the cities in the rate at which they adopt innovations, we have reason to examine the city and school system data first.

Measurement of Innovation

In order to look at the city school systems as single units we created a variable which describes the general level of innovation for each system. The variable is a mean score, calculated by adding the individual innovation scores for each school in a school system and dividing by the number of schools within the city for which we have the necessary information (cf. column 4, Table III.1).

The innovation scores for cities ranges from 8.6 to 2.4 with an overall city mean of 4.8. In Table III.1 we present the distribution of cities along this variable in rank order from high to low. Columns two and three of this table show the distribution of scores within each city. In column two we give the range of scores for the schools in each city. As we can see, in most school systems there are great differences between the schools. Even the cities with high mean innovation scores have wide variations in the extent to which innovations are adopted in the individual schools. However, although the range of scores is broad in these cities -- there are differences of as many as twelve innovations between the highest and lowest schools -- we should also note that the ranges both start and end at a higher point in those cities at the top of the distribution. Most schools in the highly innovative cities have more than two innovations and some have as many as fourteen, whereas in the less innovative cities there are many schools with no innovations at all. The width of the range is also indicated in column three of Table III.1 where we present the standard deviation for each city. The cities with the highest mean scores often have high standard deviations which is simply another way of showing that there is great variation within these cities. However, there are relatively high standard deviations scattered throughout the distribution indicating that great differences between the schools within a single city is not just a phenomenon of the cities with higher scores.

In column four of Table III.1 we present the number of schools in each of the cities which returned questionnaires in the initial NASSP study. This figure represents the number of schools which were used to calculate the mean scores. In the next column we have the figure for the total number of high schools in each city system. By comparing the two numbers we can assess the degree of cooperation for the NASSP study. In eight cities all high schools responded to the survey. In others the response rate was much lower, dropping to 41% in Pittsburgh. The overall response rate was 81%.

In the following analysis of the differences in innovation scores between the cities we focus on the context, starting with the broadest context -- the region of the country in which the school is located -- and narrowing our sights as we consider the city, the school system and finally the effects of community involvement in the neighborhoods in which the individual schools are located. The major portion of our investigation in this chapter examines variables describing the cities and the school systems. The city characteristics we include are size, median family income, percent below poverty level, racial composition and education level. The school system characteristics we examine are size, racial composition of the student enrollment, per pupil expenditures, teachers' salaries and organization of the central office. There are several variables which we consider relevant as both city and school system characteristics: size, racial composition, and some estimate of the availability of money. When we examine these variables as city character-

TABLE III.1

MEAN INNOVATION SCORES FOR CITIES

CITY	Mean Innovation Score	Range Within City	Standard Deviation	Number of Schools In-Study/Total
Miami	8.6	3-14	3.4	17/21
Minneapolis	8.6	2-14	3.9	21/27
San Diego	7.8	3-13	2.7	20/21
Omaha	7.4	0-12	4.2	7/7
Seattle	7.3	1-12	3.1	11/14
Oklahoma City	7.1	4-11	2.8	9/15
San Antonio	6.8	3-11	2.7	9/9
Portland	6.3	4-12	2.4	12/18
Atlanta	6.9	1-10	2.7	21/27
Honolulu	5.8	4-7	1.3	5/5
Birmingham	5.4	0-10	2.5	14/15
Norfolk	5.4	5-7	0.6	5/5
Baltimore	5.4	2-11	2.7	15/21
Philadelphia	5.3	0-11	2.8	15/23
Long Beach	5.2	1-9	2.9	5/7
Rochester	5.1	1-10	2.6	9/11
Louisville	5.9	0-12	3.6	6/7
Houston	5.0	0-12	3.1	21/25
Phoenix	5.9	2-9	2.4	10/10
San Francisco	4.8	2-9	2.5	10/10
Denver	4.8	3-7	1.7	6/10

TABLE III.1 (cont.)

CITY	Mean Innovation Score	Range Within City	Standard Deviation	Number of Schools In-Study/Total
Washington	4.6	2-9	2.5	9/20
Cleveland	4.6	0-9	2.9	16/19
Dallas	4.4	2-12	2.7	20/21
Memphis	4.3	1-11	2.3	21/26
Pittsburgh	4.3	2-6	1.7	7/17
Detroit	4.2	2-10	2.5	21/24
St. Paul	4.1	1-8	2.2	9/9
Kansas City	4.1	2-7	1.5	10/11
Fort Worth	4.0	1-9	2.1	14/15
St. Louis	3.9	1-7	2.3	9/15
Indianapolis	3.8	0-8	2.6	12/12
Cincinnati	3.7	1-9	2.9	7/9
Akron	3.7	0-9	3.1	9/10
Los Angeles	3.6	0-10	2.6	44/56
New York	3.5	0-13	2.9	43/72
Columbus	3.4	1-10	2.4	13/15
Toledo	3.3	0-6	2.2	10/11
Chicago	3.3	0-10	2.2	51/65
Boston	3.2	0-11	2.8	13/16
New Orleans	3.2	1-10	2.7	13/15
Newark	3.0	0-6	2.0	9/10
Buffalo	2.4	0-8	2.4	13/20
Milwaukee	2.4	1-5	1.4	7/15

istics, their relation to the school system is presumed to be indirect.

Throughout most of this chapter our dependent variable is the mean innovation score for the cities. In the final section (when we look at the effects of community involvement in the schools) we use the innovation scores for individual schools discussed in our introductory chapter as our dependent variable.

Region of the Country

Looking over the distribution of cities in Table III.1, we can see that there is a pattern in the rank order in which the cities appear. Cities located in the Prairie/Western, Southwestern and Southern portions of the country are more likely to appear at the top of the list than cities from other regions.[1] No Northeastern or Border cities appear until we go as far down as Baltimore and Philadelphia, and the first Northcentral city is Cleveland, in the twenty-second place on the list. This ordering is in line with popular conceptions that the West is a more innovative region of the country and that the East is more traditional in its approach to education. However, when we look more closely at the regional distribution of cities we can see that there are wide variations within the regions as well as between them.

In Table III.2 we present the regional classification of cities with the mean scores for the entire region and the standard deviation of the scores within each region. As we can see, although there are differences between the regions in this country in the rate at which city school systems within them adopt educational innovations, there are also wide variations within most of

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[1] The regional classification of cities is presented in Table III.2.

TABLE III.2

REGIONAL CLASSIFICATION OF CITIES

WITH INNOVATION SCORES, MEANS, AND STANDARD DEVIATION

NORTHEAST:		BORDER:		SOUTHWEST:	
Rochester	5.1	Louisville	5.0	Fort Worth	4.0
Buffalo	2.4	Kansas City	4.1	Oklahoma City	7.1
Newark	3.0	Cincinnati	3.7	Phoenix	5.0
Boston	3.2	St. Louis	3.9	San Antonio	5.3
Philadelphia	5.3	Washington	4.6	Dallas	4.4
New York	3.5	Baltimore	5.4	Houston	5.0
Mean	3.8	Mean	4.5	Mean	5.4
S.D.	1.01	S.D.	.61	S.D.	1.16
N	(6)	N	(6)	N	(6)

NORTHCENTRAL:		SOUTHEAST:		PRAIRIE/WESTERN:	
Akron	3.7	Miami	8.6	Omaha	7.4
Toledo	3.3	Norfolk	5.4	St. Paul	4.1
Columbus	3.4	Birmingham	5.4	Portland	6.3
Indianapolis	3.8	Atlanta	6.0	Long Beach	5.2
Pittsburgh	4.3	Memphis	4.3	Minneapolis	8.6
Milwaukee	2.4	New Orleans	3.2	Denver	4.8
Cleveland	4.6			Seattle	7.3
Detroit	4.2			San Diego	7.8
Chicago	3.3			San Francisco	4.8
				Los Angeles	3.6
Mean	3.7	Mean	5.5	Mean	6.0
S.D.	.63	S.D.	1.66	S.D.	1.63
N	(9)	N	(6)	N	(10)

the regions and, particularly, in the Western and Southeastern areas. Although the western portion of this country may be more innovative, not all cities in the West conform to this standard. And, in the South we can see that the high mean is to a great extent determined by the high scores in Miami and Atlanta, two atypical Southern cities. This leads us to suspect that perhaps the difference between the regions is created more by city factors than regional ones, i.e., that there is something about the cities in certain portions of the country that allow for more innovation rather than the fact that there is a regional ethos. Below when we look at variables describing the cities we will be able to account for some of the findings noted above.

Cities and School Systems

Size

We first examine the relation of size to the adoption of innovations. We want to know whether the size of the city population is in any way related to the rate at which the cities adopt innovations in their schools. In the popular literature one frequently reads about the distinct problems of big cities and their school systems. Whether the larger cities have more problems because of their size alone or because of other characteristics which are related to size is not always clear. For instance, larger cities are more likely to have a variety of social problems that compete with education for funds as well as more highly bureaucratized school systems.

In this study we examine only the largest cities in the nation. Therefore we cannot draw distinctions between very large and very small cities and totally clarify the effects of city size on school systems. On the other hand, the cities in the study do cover a fairly broad spectrum of size themselves and therefore we can see whether there is any effect of size above a certain level.

The cities in our study range in size of population from a low in Akron of 275,425 to a high in New York City of almost eight million.[1] Among these cities, population size has a decided negative relation to the mean number of innovations adopted in the school system (r = -.28). In Table II.3 we can see that the relationship between city size and innovation rates is basically a linear one.

TABLE III.3

MEAN INNOVATION SCORES FOR CITIES

BY SIZE OF CITY

CITY SIZE	Mean Innovation Scores	Number of Cities
Small (below 500,000)	5.3	19
Medium (500,000 to 699,999)	4.9	11
Large (over 700,000)	4.2	14
		N (44)

Our question then is what makes larger cities less likely to innovate than smaller ones and, more specifically, what is there about cities with populations over 700,000 that inhibits the adoption of innovations. Before we attempt to explain this relationship by the introduction of other city characteristics, we want to see whether we find a similar relationship between size and innovation at the *school system* level.

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[1] City population size was obtained from the 1970 census, op. cit.

Naturally, city population size is highly related to the size of the high school enrollment (r = .64).[1] The correlation is not perfect because cities vary in the proportions of the population in different age groups (i.e., some cities are "younger" than others and have a higher proportion of school-age children). Also, cities differ in the percent of students who attend private schools.[2] When talking about the size of the educational system, we want to emphasize again that we are looking only at one end of a spectrum. We do not include any school system with fewer than 11,000 students and many school systems in this country are considerably smaller.

The data from other studies which have examined the relation between school system size and the adoption of new educational practices is contradictory. At least one study has found that size of school district enrollment is positively related to innovation in districts with enrollments ranging from 600 to 99,000 students[3] whereas another assumes that large cities always fare worse because "the sheer size of the central city school system becomes of *overriding importance* when one considers the logistics of change." (Italics mine)[4] Research on industrial organizations suggests that larger organizations adopt new ideas and new techniques at a faster rate than smaller organizations, although there is some indication that the relationship might be curvilinear, with the very large organizations being somewhat less innovative than the medium-sized ones.[1]

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[1] School enrollment obtained from the 1970 census, *op. cit.*

[2] The proportion of students who attend private schools ranges from 33% to 40%, with an overall mean of 27%. This data was obtained from the 1970 census, *op. cit.*, which lists separately figures for public school enrollment and total school enrollment.

[3] Ronald G. Havelock and Mary C. Havelock, *Educational Innovation in the United States*, *Vol. 1: The National Survey: The Substance and the Process*, (Center for Research on Utilization of Scientific Knowledge, Institue for Social Research, Ann Arbor, Michigan, 1973), p. 20.

[4] Morris Janowitz, *Institution Building in Urban Education* (University of Chicago Press, Chicago, 1971) p. 23.

That the city size (or its correlates) influences education independently of size of enrollment is suggested by the fact that there is only a weak relation between the number of students enrolled in the public high schools and the innovation rate of the system (r = .21) and no relation between the number of high schools in the school system and innovation rates, although this measure of school system size is also highly related to city population size (r = .94).

Since we find only a slight relationship between school system size and innovation rates, we suspect that whatever is causing the relationship between city size and innovation rates, it must have something to do with the resources at the disposal of the city or with the characteristics of the population rather than the fact of size alone. Therefore, we now turn to examine a series of variables which differentiate the cities to see whether they help to explain our finding.

Money

One way in which large and small cities may differ is in the amount of money that is available both in terms of individual family incomes and expenditures for education. In the analysis below we first consider two measures of the wealth of the city population and then turn to the question of per pupil expenditures in the school system.

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[1] A review of the relevant literature on this question can be found in Ronald G. Havelock, Planning for Innovation through Dissemination and Utilization of Knowledge (Ann Arbor, Michigan: Institute for Social Research, University of Michigan, 1969), Section 6, p. 10.

We use two separate measures of the wealth of the city population: the first is median family income which allows us to assess the general standard of living in the city; the second is the percent of the city population that lives below the poverty level. We use this measure because we want to be certain that we pick up any inequalities in education in cities including many poor people.

Neither of these measures has a significant correlation with the innovation rate in a city. Although the median family income is *positively* correlated with city size (r = .38) it cannot explain the negative relationship between size and innovation rates since it is the larger cities which have more wealth, and this factor is unrelated to innovation.

"One thing we may be sure of in the study of adaptability. Adaptability is influenced by the amount of money spent."[1] With this assertion Ross opens his chapter on the relationship between financial resources and adaptability in which he cites much research data (deriving primarily from the Mort studies) which seem to confirm his initial statement. However, some other, more recent, research by Carlson[2] and Janowitz[3] has yielded contradictory findings. Carlson found a rather low relation between expenditure per child (his measure of financial resources) and amount of adoption of new educational practices. And Janowitz has noted that a large part of the thrust for increased funds has been to reduce class size and not to introduce change into urban school systems.

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[1] Donald H. Ross (ed.), *Administration for Adaptability* (New York: Metropolitan School Study Council, Teachers College, Columbia University, 1958), pp. 362-402.

[2] Richard O. Carlson, *The Adoption of Education Innovations* (Eugene, Oregon: University of Oregon Press, 1965), p. 63.

[3] Janowitz, *op. cit.*, p. 21.

Our findings are more in line with those of Carlson and Janowitz than the earlier studies. Per pupil expenditures for the cities in our study ranges from a low of $358 in Birmingham to a high of almost three times that much in Rochester.[1] The overall mean for per pupil expenditures in the Big cities in 1970 was $686. As we can see in Table III.4 there is a slight negative relation between per pupil expenditures and the adoption of innovation.

TABLE III.4

MEAN INNOVATION SCORES FOR CITIES
BY PER PUPIL EXPENDITURES

Per Pupil Expenditures	Mean Innovation Scores	(N)
$300 to $599	5.1	13
$600 to $699	5.3	10
$700 to $799	4.0	13
$800 and over	4.0	7
		(43)

From our findings we would argue that the amount of money spent for education on a per pupil basis does not necessarily reflect the commitment of a community to creating high quality education. In fact, per pupil expenditure probably reflects the expense of running a school system more than commitment to quality education, since it is positively correlated to city size (r = .) and negatively to the percent of the population living below the poverty level

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[1] Per Pupil Expenditure data obtained from Digest of Educational Statistics, op. cit.

(r = -.28), variables which would relate to the general cost of living.

However, our findings have to be put in perspective. Many writers in discussing the problems of urban education emphasize the crucial variant of money, noting that cities receive proportionally less state aid than other communities,[1] and that costs in large cities are much higher than in suburban or rural areas with the result that the same amount of money has less potential for actually being spent on improving the education in cities than in other areas. Our data do not speak to these points directly. We are not referring to the issue of quality of education but only to the extent to which a school system is willing to experiment in new educational techniques. And on this issue, our data show that when looking at differences among cities -- rather than between cities and other types of communities -- financial resources alone are not sufficient to create an innovative climate.

Racial Composition

We now introduce the racial composition of the city and of the school system as variables which may help to shed light on the relationship between city size and innovation.

The racial composition of the city population is related to the mean innovation rate of a city. The higher the proportion of whites in the population as a whole, the greater the likelihood that the school system will be innovative (r = .25). The proportion of a city that is neither white nor Black is not related to the number of innovations in the city school system at all. However, the larger the percentage of Blacks in the city population, the lower the mean number of innovations (r = -.22).

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[1] Seymour Sacks and David Ranney, The Allocation of Fiscal Resources to Large City School Districts (Syracuse: Syracuse University Press, 1968).

In the tables below we will use the proportion of Blacks in a city rather than any other racial or ethnic group to describe the composition because the census definition is clearer for Blacks than it is for whites[1] and because whether the remainder of the city's population is Caucasion or of some other minority group does not seem to be as relevant a distinction. A large Oriental or Spanish surname population does not have any significant effect on innovation.[2] It is important to note, however, that when we employ the variable percent Black to describe a city, this does not mean that the city is otherwise mostly white, since several of the cities with small Black populations have other minority populations.[3]

As Table III.5a makes clear, the negative relation between the percent of the population that is Black and innovativeness is by no means a strictly linear one. The correlation is masking a "step" relationship. There are only slight differences between the several groupings of cities with more than a 10% Black population but the ten cities with less than a 10% Black population are, when combined, far more likely to be high on innovation. (This is not to say, of course, that no city with a significant Black population has a high mean innovation score: Miami and Oklahoma City both have Black populations which exceed 10% of the total and have innovation scores of 8.6 and 7.1 respectively.)

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[1] The 1970 census defines populations as being White, Negro and only in some cases uses other other classifications. Therefore Spanish and other populations are occasionally classified as Whites.

[2] There is no relationship between the percent of the school population that is neither white nor Black and mean innovation scores.

[3] For instance, the Southwestern cities contain sizeable Mexican-American populations.

TABLE III.5a

MEAN INNOVATION SCORES FOR CITIES

BY PERCENT OF CITY POPULATION THAT IS BLACK

Percent Black	Mean Innovation Scores	Number of Cities
Less than 10%	6.3	10
10% to 19%	4.3	14
20% to 39%	4.3	11
Over 40%	4.5	8
		(43)*

If we examine the relationship between racial composition and innovation at the school system level we find a similar relationship. Mean innovation scores are strongly related in a negative direction to the percent of the student body that is Black (r = -.47); not at all to the percent of the student body that is Caucasian; and only slightly, positively, related to the percent that is neither Black nor Caucasian (r = .19). This means that some of the cities that have high innovation rates have large non-Black minority student populations and that these populations do not inhibit the rate of innovation. However, these are also, generally, cities with small Black populations. Therefore, we assume that what is causing the relationship is the absence of a Black minority and not the presence of other minority groups.

The relationship between the proportion of the school system population that is Black and mean innovation scores when examined in tabular form (Table III.5b) appears very much as it did when examined at the city level: there is, again, a "tipping point" above which differences in the percent of the student population that is Black have no effect on innovation rates. School systems with more than 20% Black students are far less likely to be innovative than school systems with fewer Blacks. (The difference in "tipping points" between the city level and the school system level can probably be ascribed to the fact that Blacks have a higher birthrate than whites -- and therefore have more school-age children -- and the fact that where there are more Blacks in a school system more parents may send their children to private schools.) In any case, the ten cities with small Black student populations are the same cities with few Blacks in the population as a whole. They are Denver, Long Beach, Minneapolis, Omaha, Phoenix, Portland, San Antonio, San Diego, Seattle and St. Paul.

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*All tables which include the variable of racial composition exclude Hawaii because the racial situation there is totally different than that in the continental U.S. cities.

TABLE III.5b

MEAN INNOVATION SCORES FOR CITIES

BY PERCENT OF HIGH SCHOOL ENROLLMENT THAT IS BLACK

Percent Student Population That Is Black	Mean Innovation Scores	Number of Cities
Less than 20%	6.3	10
20% to 29%	4.1	11
30% to 39%	4.3	11
Over 40%	4.3	11
		(43)

Size and Racial Composition

We now turn back to the question of the relation between city size and innovation rates to see whether the findings about racial composition of the city population help to clarify it. Although there is no statistical correlation between city size and the racial composition of a city (because of a slightly curvilinear relationship) if we look at these two variables in tabular form (Table III.6), it is clear that there is some positive relationship. No city with a population of over 700,000 has a Black population which comprises less than 10% of the total city population, whereas a total of twelve smaller cities have relatively small Black populations. Given our findings about the relation between racial composition and innovation, it is not surprising that when we look at innovation rates within categories of city size and the percent of the city population that is Black, the relationship between city size and innovation essentially disappears. Looking at the rows in Table III.7 we find no consistent effects of city size on innovation rates. However, if we read down the columns we can see that the relationship between the percent of the city population that is Black and innovation scores persists quite strongly and in much the same form as before.

Since neither city nor school system size have any consistent relation to innovation independent of the relation of the percent of the city or school system population that is Black, we now want to ask what it is about cities or school systems that have substantial Black minority populations which make them less likely to innovate.

We first want to consider the question of desegregation. Obviously, school systems with large proportions of Black students are likely to have dealt with the problems of desegregation during the past decade. The effort

TABLE III.6

PERCENT BLACK POPULATION BY CITY SIZE

		CITY SIZE	
Percent Black Population	Small	Medium	Large
Less than 10%	28%	45%	--
10% to 19%	33	18	43%
Over 20%	39	36	57
	(100%)	(99%)	(100%)
N	18	11	14

TABLE III.7

MEAN INNOVATION SCORES FOR CITIES BY SIZE AND RACIAL COMPOSITION

		CITY SIZE	
Percent Black Population	Small	Medium	Large
Less than 10%	6.3 (5)	6.3 (5)	-- (0)
10% to 19%	5.3 (6)	3.3 (2)	3.7 (6)
Over 20%	4.4 (7)	3.9 (4)	4.6 (8)

involved in working out a viable plan for ending school segregation might have interfered with other school system operations and, in particular, with research into new educational practices since innovation can be set aside for a time without endangering other important school functions. Also, it is possible that school systems with large Black student populations would attempt to maintain a "low profile" during a period of tension. If the introduction of major innovations would draw attention to the school systems and raise new questions such as whether the innovations were being "distributed" equally to Black and white schools, school administrators might decide to eschew such practices until they could do so without risking adverse publicity.

In fact, however, we find no difference in innovation rates between school systems which have dealt with problems of desegregation and those which have not. Among the 26 school systems for which we have data, 9 answered affirmatively to the question:

> Were any high schools in the school system desegregated through a ruling from the Central Office or by Court Order prior to or during the 1967-68 school year?[1]

The mean innovation scores for these nine schools was 5.1, the same as for the 17 school systems which had not implemented any desegregation plan. If we control for the racial composition of the school system, these findings remain the same. Six cities with Black student enrollments of over 20% were desegregated and 11 were not. The scores for these two groups of cities are 4.7 and 4.3 respectively. Among the cities with fewer than 20% Black students there were only two which were desegregated. The mean scores for these two cities are somewhat lower than for the six cities which did not desegregate (scores of 5.[illegible] and 6.5 respectively). However, with so few cases, and with the direction opposite to that in the cities with larger Black populations, we would not wish to draw any conclusions. Therefore, we tentatively can say that the differences between cities with large Black student populations and those with

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[1] This question was asked in the survey of central offices which is further described in Appendix D.

20% or less Black student enrollment is not due to the fact that the former group of cities have dealt directly with problems of racial balance during the past ten years. On the other hand, it remains likely that the existence of a difficult racial situation is a major factor in determining innovation rates.

Education Level

The next variable we introduce -- the percent of a city population which has graduated from high school -- potentially can explain the relationships discussed above since it is plausible that the higher percentage of Blacks in a city depresses innovation because of a lower percentage of high school graduates. It is frequently argued that communities with a high number of well-educated parents have better schools because these parents have the knowledge and ability to make certain that their concern with education is translated into action by the school board and other educators. This argument is summed up by Kumpf who asserts that educational level is a key component of the type of community most likely to support innovative schools:[1]

> An adaptable school tends to be located in a community which . . . tends to be high in per capita wealth, per pupil expenditures for education, percent of eighth grade, high school and college graduates. A fairly high median (educational level) has been attained by those who are twenty-five years of age and older in the community. . . . It has a high level of understanding of what schools can do.

In our sample of cities the percent of the population that has graduated from high school (our measure of educational level) ranges from 33% in St. Louis and Newark to 66% in San Diego and Honolulu.[2] The relation between the percent of a population with at least a high school education and the city innovation rate is a fairly strong linear one (r = .28): the mean city innovation scores rise with each additional 10% of the population that has graduated from high school.

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[1] Carl H. Kumpf, The Adaptable School (New York: Macmillan Co., 1952), pp. 13-15.

[2] Percent high school graduates data obtained from 1970 census, op. cit.

As we might expect, given the well-known findings about differences in mean education levels between the various subpopulations of this country, the percent of a city population that has graduated from high school is negatively related to the percent of the population that is Black (r = -.50).

The question therefore is whether it is something unique about the racial composition of a city that is determining the innovation level -- e.g., the fact that cities in which there is a higher proportion of Blacks face unique problems which may inhibit the adoption of innovations in the school system -- or whether educational level is an important determinant, independent of its relation to the percent of the city population that is Black.

In Table III.8 we show the mean innovation rates of the cities within our categories of the percent of the population that is Black and percent of the population with at least a high school education. Examining the table we find, by reading down the columns, that there are no independent effects of education level. Within the categories of percent Black, there are only slight and inconsistent differences between cities with different proportions of the population with a high school education. Reading across, however, we see that the relationship between the percent of the city that is Black and innovation rates persists quite strongly: the ten cities with fewer Blacks have higher innovation rates than the remaining thirty-three cities no matter what educational level we examine. The data suggest (although there are very few cases) that although education level may be an important determinant of innovativeness in some communities, among the larger cities in this country there are other factors which are far more important. Whereas in small communities it may be possible for a well-educated population to determine the quality of the schools, in the large cities other factors intervene.

TABLE III.8

MEAN INNOVATION SCORES FOR CITIES BY PERCENT BLACK POPULATION AND PERCENT HIGH SCHOOL GRADUATES

	PERCENT CITY POPULATION BLACK		
Percent High School Graduates	Low (Less than 10%)	Medium (10 to 19%)	High (Over 20%)
30% to 39%	-- (0)	-- (0)	3.9 (5)
40% to 49%	6.8 (1)	3.8 (3)	4.6 (10)
50% to 59%	5.7 (4)	4.6 (8)	4.6 (4)
Over 60%	6.7 (5)	4.2 (3)	-- (0)

Up to this point, then, we have not found any characteristics of cities or their populations which account for differences in innovation rates except for the proportion of the city that is Black. Variables which researchers in the past have found to be important determinants of innovation levels in small communities such as the size of the system, the amount of money available and the education level of the community do not operate in the same way within the large cities. Below we will look more closely at the immediate context of the schools, examining parent involvement. Then we will look at several other school system features: teachers' salaries, the presence or absence of a teachers' union and the relationship between the central office and the individual schools in the system. Before moving on, however, we would like to point out that our finding that cities with larger proportions of Blacks living in them are less likely to innovate helps to explain, to some extent, the variations within and between regions noted above. All ten of the cities with small Black populations are located in either the Southwest or the Prairie/West portions of the country. If we control for the percent of Blacks living in a city, we find that in the over 10% Black column the Prairie/West region is no longer extraordinarily high and that, although some regional differences remain, they are much reduced. This indicates that in part the differences between regions are because of the racial composition of the cities included in the region.

TABLE III.9

MEAN INNOVATION SCORES FOR EACH REGION

CONTROLLING FOR PERCENT OF CITY POPULATION THAT IS BLACK

	PERCENT CITY POPULATION BLACK	
	Low (Less than 10%)	High (Over 10%)
NORTHCENTRAL	--	3.7 (9)
NORTHWEST	--	3.8 (6)
BORDER	--	4.5 (6)
SOUTHEAST	--	5.5 (6)
SOUTHWEST	5.9 (2)	5.1 (4)
PRAIRIE/WEST	6.4 (8)	4.2 (2)

Community Involvement

Much of the research on innovation in schools up to this time has focussed on school systems located in communities far smaller than the large urban environments which surround the schools in this study. This fact might help to explain why we have not here duplicated some finding of past research. For instance, we have not found the education level or income level of the city population makes any difference in the innovation rates in the system as a whole. But, we are not examining these variables at the same level as has been done in the past. Cities are made up of many different types of communities and by looking at "averages" as we have, it is not surprising that we cannot duplicate the findings of those who focussed on smaller, more homogeneous units. There is, however, one way in which we can examine the individual school's relations with their immediate neighborhood context, and this is by looking at parent involvement in the schools. In the past it has been noted that the degree to which parents are concerned with and involved in the educational process of their children can be a crucial factor in determining the quality of the education provided.[1] We want to know whether within cities such involvement is possible and further whether it has any impact on the type of education which occurs.

In the NASSP study the principals were asked to indicate the extent to which lay people from the community were involved in activities conducted by the school. They were offered a list of seven activities and were asked to check whether community involvement occurred 1)"frequently"; 2)"sometimes"; 3)"never or almost never." The seven activities are listed in Table III.10

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[1] Kumpf, *op. cit.*

along with the percent of principals who responded that parents were involved "frequently."

TABLE III.10

COMMUNITY INVOLVEMENT ACTIVITIES

ACTIVITIES	PERCENT OF SCHOOLS RESPONDING "FREQUENTLY"
Overall educational planning for this school	11% (653)
Overall evaluation of this school's program	9% (657)
Planning and/or supervising supplementary educational experiences for the students	13% (656)
Planning and/or supervising aspects of this school's student activity programs	13% (650)
Career development programs involving teaching assistance with increasing responsibilities	14% (649)
Advisers for special instructional programs	24% (650)
Occupational information planning conferences	24% (649)

Note: N's vary because of different response rates.

A score for community involvement was created for each individual school by adding the number of frequent responses, weighting the first two items (overall educational planning and overall evaluation) as two since they seemed to be more important and also to occur with less regularity than many of the other items.[1] The scores for the schools on this variable of community involvement range from 0 to 9 with an overall mean of 3.2.

The degree to which the community immediately surrounding a school is

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[1] We do not use cities in this analysis because the range of scores for the schools within the cities were too broad for us to combine them into a valid single indicator.

TABLE III.11

COMMUNITY INVOLVEMENT AND INNOVATION RATES

(FOR INDIVIDUAL SCHOOLS)

Community Involvement: (Number of activities in w which lay people "frequently" involved)	Percent of Schools with High Innovation Rates* (5 or more)	N
Very Low (0-1)	33%	(189)
Moderately Low (2-4)	44%	(169)
Moderately High (5-6)	51%	(158)
High (7-9)	60%	(121)

Note: This variable has been described above. Cf. p. 15, Chapter I.

involved in the educational processes which take place in the school is strongly related to the rate at which the school innovates. As we can see in Table III.11 schools in which there is frequent lay involvement in a wide range of activities are far more innovative than schools in which the community is rarely involved. We do not necessarily want to draw a direct connection between these two phenomena and argue that parent involvement creates or causes innovation. It is possible that the two derive from an underlying administrative commitment to flexibility which encourages both the involvement of individuals outside of the bureaucracy in educational programs as well as the adoption of innovations. It is also possible that the impulse for lay involvement stems from the community itself and is an indication of dissatisfaction and pressure for change. In our next chapter we will discuss this further and demonstrate that although community involvement is always related to innovation, the relationship is far stronger in some types of communities (as reflected by the composition of the student enrollment) than in others. We will also examine there the effects of community involvement on the discrimination with which the innovations are selected.

School System

Teachers' Salaries

At the school system level, a variable which might reflect the importance a community places on the educational process is the amount they are willing to pay to acquire and retain good teachers. Our data, however, show only a slight positive relation between teachers' salaries and rates of innovation: the mean innovation score for cities with annual teachers' salaries over $8,000 is 5.1; the mean innovation scores for cities which pay their teachers less than that amount is 4.7.[1] Further, teachers' salary is negatively related to the percent of the student population that is Black (r = -.35). Of the seven cities with less than a 20% Black student enrollment (for which we have data on teachers' salaries) only two (28%) grant their teachers mean salaries of less than $8,000 a year. Of the twenty-seven cities with larger Black student enrollments, eighteen (66%) pay their teachers annual salaries of less than $8,000. The mean innovation scores controlling for teachers' salaries and percent of the student population that is Black are shown in Table III.12.

TABLE III.12

MEAN INNOVATION SCORES FOR CITIES

BY PERCENT BLACK STUDENT ENROLLMENT AND TEACHERS SALARIES

	PERCENT STUDENT ENROLLMENT THAT IS BLACK	
Teachers' Salaries	Over 20%	Under 20%
Under $8,000	4.2 (18)	8.0 (2)
$8,000 and over	4.4 (9)	6.1 (5)

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[1] Data on teachers' salaries obtained from Digest of Educational Statistics, Op. cit.

Even with a limited number of cases, it seems obvious that innovation rates are more determined by the racial composition of the student population than they are by the amount of money that the school system is willing to pay its teachers. In fact, teachers' salaries, like per pupil expenditures, seem to be related more to factors such as family median income (r = .40), city size (r = .39) and the percentage of high school graduates (r = .44) than to a commitment to education as evidenced by innovation. If school systems with fewer Blacks are more likely to pay their teachers good salaries, it may well be because that is what is demanded in a community where the standard of living is generally higher.

Teachers' Unions

There is another side to the issue of salaries. They may be determined to some extent by whether or not the teachers in a school system are represented by a union.[1] We find, with 22 cases that in the school systems where the teachers are represented by a union, the salaries are, on the average, almost $1,000 higher than where there is no union looking after the interests of the teachers. Teachers' unions may also affect innovations rates but the effect it will have is debatable. Some teachers argue that a union will help them become more professional and that they will be more likely to support high quality educational practices. Opponents of unions argue that when teachers are represented by a union they might show more resistance to what they consider threats to their autonomy and with union support will effectively block any changes. In our data we do not find any significant differences in innovation levels between those cities where the teachers are represented by a union and those in which they are not. Thus we cannot support either view. However, the teachers unions are a relatively recent phenomenon and our data may not reflect any impact they may have had since the late 1960's.

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[1] The questionnaire mailed to the Central Office of each school system asked for information about union representation (cf. Appendix D). Of the twenty-two cities which responded to this questionnaire, teachers were represented by a union in fifteen.

Decentralization

The relationship of the degree of decentralization to innovation is one which has been explored in a variety of organizations. In most cases it is found that organizations with a decentralized administrative structure have a higher rate of adoption of innovation. For instance, defining centralization as the "concentration of power and decision making in the hands of a small proportion of individuals," Hage and Aiken argue that the higher the centralization the lower the rate of program change. The supporting rationale for this is 1)when power is located in the hands of a few individuals, these individuals are less likely to experiment because they feel that they might lose their power; 2)more participation in decision-making has the potential for bringing many diverse ideas forward that may identify new areas for change, but less participation does not; and 3)more decentralization also leads to conflict in perspectives for dealing with issues which is likely to identify new areas for change.[1] Along these lines, Cillie found that schools with decentralized decision-making apparatus adopted more new programs than did centralized schools.[2] Outside of the field of education, Ben-David in his study of medical research found that the development of medical techniques and programs progressed more slowly in countries with highly centralized medical research organizations.[1]

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[1] Jerald Hage and Michael Aiken, Social Change in Complex Organizations (New York: Random House, 1970), p. 38.

[2] Francois Cillie, Centralization or Decentralization: A Study in Educational Adaptation (New York: Teachers College, Columbia University Press, 1940), p. 195.

Some other researchers add qualifications to these conclusions. In a discussion of the effects of various organization characteristics on innovation, Zaltman et. al. note that "centralization can have different effects at different stages of the innovation process. Less centralization appears to be more appropriate in gathering and processing the information at the initiation stage . . . However, at the implementation stage it may be that more strict channels of authority can reduce potential conflict and ambiguity that could impair implementation."[2] Similarly it has been noted that while decentralization may increase the likelihood of responsiveness at the local level, innovations which demand a large outlay of money or central office approval may be more easily implemented in a highly centralized system.[3]

Most discussions of centralization use a measure describing the concentration of decision-making power in the hands of a small number of individuals. In our discussion we use a similar variable which reflects the degree to which the school systems allow decision-making to take place at the individual school level (cf. below). We also include a measure of "ecological" decentralization, i.e., whether the school district is divided into a number of smaller units for administrative purposes. In large cities (e.g. New York) one of the responses to demands for community control has been the formation of local offices to handle administrative problems within more discrete areas. Although the two types of decentralization -- decision-making and ecological -- may coincide, they need not. For instance, a school system may have a number of separate offices which handle administrative problems as they arise but have no control over the decisions per se.

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[1] Joseph Ben-David, "Scientific Productivity and Academic Organization in Nineteenth-Century Medicine," The Sociology of Science, ed. Bernard Barber and Walter Hirsch (New York: The Free Press, 1962), pp. 305-328.

[2] Gerald Zaltman et. al., Innovations and Organizations (New York: John Wiley and Sons, 1973), p. 146.

[3] Allen H. Barton, Organizational Measurement and Its Bearing on the Study of College Environments (Princeton: College Entrance Examination Board, 1961), p. 26.

Our first measure of decentralization derives from questions asked of principals about the decision-making process in their school systems. The principals were asked to indicate at what level decisions relating to five areas of school policy were made. The five areas were: 1)selection and hiring of teaching staff; 2)decisions regarding the content of specific courses; 3)total school budget; 4)diploma requirements; and 5)decision to introduce a new course. For each area the principals were given four options.

1) Decision made at the central administrative level without the principals' involvement.
2) Decision made at the central administration level with principals' called in for consultation and suggestions.
3) Decision made by principals but with the approval of the central administration, or under central administration guidelines.
4) Decision made by principals without the approval of the central administration.

The principals were given a single score on a variable we can consider to be individual "autonomy" created by adding the individual scores for each of the five areas of decision-making. A high score indicates that the decision-making power rests more with the principal than with the central office; a low score indicates control at the central office level. The scores for the principals within a single city were then averaged to provide a mean "decentralization" score for each city.[1] These scores range from 2.8 to 7.8 with an overall mean of 5.6. The distribution of cities along this variable is presented in Table III.13.

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[1] We felt this was a legitimate procedure because the standard deviations

TABLE III.13

DISTRIBUTION OF CITIES

ON DECISION-MAKING DECENTRALIZATION SCORES

SCORES	Percent of Cities	N
Low (Below 4.0)	23%	10
Medium (4.1 to 5.9)	42	18
High (6.0 and over)	35	15
	(100%)	(43)

Decentralization within a city school system is related to the rate at which the system innovates: school systems which are more highly decentralized, i.e., allow for more decision-making at the individual school level, are more innovative than those in which most of the decision-making takes place in the superintendent's office (Table III.14). School systems in which the principals are permitted to act more autonomously allow more flexibility. If all decisions have to go through the central office, the principals are less able to respond quickly and appropriately to their perceptions of what changes are needed in their schools.

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for the scores within cities were relatively low. Therefore we assume that decentralization of decision-making is a matter of central office policy rather than a response to individual principals.

TABLE III.14

INNOVATION SCORES FOR CITIES GROUPED BY DECENTRALIZATION SCORES

Decentralization Scores	Mean Innovation Scores	(N)
Low (Below 4.0)	3.9	(10)
Medium (4.1 to 5.9)	4.8	(18)
High (6.0 and over)	5.5	(15)

Interestingly, our indicator of decentralization is also related, negatively, to the percent of the student enrollment that is Black. The ten cities which are low on decentralization are more likely to be the highly Black cities (Table III.15). This is possibly a result of the fact that cities with larger Black populations have been confronted with more public attention and criticism. The climate of concern over urban education in such cities might have created a more defensive stance in the administrators of these school systems. Centralization might have resulted as the administrators attempted to equalize the educational programs in the schools within the city or tried to handle problems of desegregation.

TABLE III.15

PERCENT OF SCHOOL SYSTEMS WITH HIGH BLACK ENROLLMENT BY DECENTRALIZATION SCORES

Decentralization Scores	Percent High Black Enrollment
Low (Below 4.0)	90% (10)
Medium (4.1 to 5.9)	84% (18)
High (6.0 and over)	15% (15)

Even when we control for the percent of the student body that is Black, however, we find that decentralization is related to innovation, although this relationship is prominent only among the cities with large Black student populations. As we can see in Table III.16, among these cities there is a difference of over one point in the mean innovation scores between those cities which are highly centralized and those in which the principals are granted considerable autonomy.

TABLE III.16

MEAN INNOVATION SCORES CONTROLLING FOR PERCENT BLACK AND DECENTRALIZATION

	PERCENT BLACK	
Decentralization	Low	High
Low (Below 4.0)	5.2 (6)	3.8 (9)
Medium (4.1 to 5.9)	7.3 (3)	4.3 (15)
High (6.0 and over)	6.0 (6)	5.2 (9)

We now turn to the question of ecological decentralization. In the questionnaires mailed to the central offics of each city school system we asked the question: "Was the central office of the school system divided into a number of smaller district officers (i.e., decentralized) prior to or during the 1968-69 school year." Out of twenty-five responding school systems, ten answered affirmatively. Primarily it was the larger school systems that were ecologically decentralized: the mean number of high schools for the ecologically decentralized systems was 34 whereas the mean number of high schools in the other systems was 15. Those that had a policy of ecological decentralization had slightly lower decision-making decentralization scores (mean of 5.3) than those that were not ecologically decentralized (mean of 5.8). Moreover, the ecologically decentralized school systems were no higher on innovation. In fact, the average innovation scores for those school systems with district offices were somewhat lower than those for the others: mean scores of 4.7 and 5.4 respectively. Naturally, since we are dealing with so few cases at this point it would be bold to draw any definite conclusions from our findings. However, the evidence indicates that a policy of ecological decentralization does not seem to give the principals any greater sense that they are in control of the policies within their own buildings and does not increase the likelihood of innovation. In many cases ecological decentralization may just be a way for the school systems to simplify their administration without demonstrating any greater flexibility or responsiveness to the needs of the separate communities.

Superintendents

Much of the theory and research on innovation in school systems presupposes a vital role for the superintendent and other members of the city-wide administrative hierarchy. First, it is argued that the superintendent is important because he stands at the top of the hierarchy of his school system and innovations are most likely to come from the top down. For instance, Wayland argues that "successful innovations are more likely to be achieved when initiated by administrative officials, not only because of the power of their office, but also because they are in a position to handle the system problems, inevitably associated with innovations in an on-going system."[1]

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[1] Sloan Wayland, "Structural Features of American Education as Basic Factors in Innovation," Innovation in Education, ed. Matthew Miles (New York: Bureau of Publications, Teachers College, Columbia University, 1964), pp. 612-613.

Similarly, Griffiths asserts "When change in an organization does occur, it will tend to occur from the top down, not from the bottom up."[1] On the other hand, Rogers argues that big city school superintendents are in a weak position vis-a-vis their own school systems and are unable to effect serious innovations because "they confront . . . protectionist interests among teachers and supervisors" which can block innovative action.[2]

A second body of research on superintendents assumes that they are in a position to be important initiators of change, but argues that this is true only of those with specific characteristics.[3] In this portion of our analysis we will focus first on this issue of whether or not certain professional or personal characteristics of superintendents are related to the rate at which they innovate. We will then consider briefly the issues mentioned above since our data has indicated that with respect to innovation the manner in which a Superintendent relates to his principals and the degree to which he grants them autonomy may be more important then the fact that he has power deriving from his administrative position.[4]

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[1] Daniel E. Griffiths, "Administrative Theory and Change in Organizations," Innovation in Education, ed. Matthew Miles (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 434.

[2] David Rogers, 110 Livingston Street (New York: Random House, Inc., 1968), p. 240. On a similar point, see also Brickell, op. cit., p. 22.

[3] See the discussions in: Richard O. [redacted], The Adoption of Educational Innovations (Eugene, Oregon: University of Oregon Press, 1965); and Alfred H. Skogsberg, Administrative Operational Patterns (New York: Bureau of Publications, Teachers College, Columbia University, 1950).

[4] Our information about the Superintendents comes from a questionnaire which was mailed to all individuals who were Superintendents of school systems in our study during the 1968-69 school year (cf. description in Chapter I). The questionnaire asked for information on the personal and professional characteristics of these individuals. Half of the 1968-69 Superintendents responded to our survey. Therefore, as our analysis here deals with only twenty-two individuals, it is meant to be suggestive rather than definitive.

A first hypothesis concerning the professional characteristics of Superintendents argues that change is more likely to occur if the Superintendent is a newcomer to the system. Griffiths, for instance hypothesizes that the number of innovations is inversely proportional to the tenure of the chief administrator.[1] Our data does not confirm this hypothesis. The length of time the Superintendents had held their positions at the time of our original survey ranged from one to sixteen years, with an overall mean of *seven*. We found no difference in the mean innovation scores between cities in which the superintendent had been there for a short period of time and those in which the superintendents had held their positions for longer. Perhaps, because of the size of city districts, superintendents are insulated by bureaucracy.

Closely related to the issue of the superintendents tenure is the question of whether the superintendent is an "insider" or "outsider." Carlson found that a high rate of adoption of innovations was more likely when the superintendents had been promoted to their positions from outside the school system and our data support these findings.[2] Half of the superintendents who responded to our questionnaire had *never* held a position in the school system before assuming that position. The mean innovation score for the school systems administered by "outsiders" was 5.7; the mean innovation score for the school systems directed by "insiders" was 4.6.

In addition, like Carlson, we found that there were other differences between the two groups of superintendents which argue for the fact that the "outsiders" are more "cosmopolitan" in their careers and attitudes. First of all, the two groups are different in educational status; only five of the superintendents had not completed doctorates by the time they were questioned: all of these were insiders. On the other hand, of the five, four were superintendents of highly innovative school systems (systems with scores of 5.8, 5.4 and 5.0) and therefore we can not conclude that the differences in educational status account for the differences in innovation rates between the insiders and outsiders. However, it is clear that school systems demand more by way of training and -- as we will see below -- experience, when they choose leaders from outside the system.

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[1] Griffiths, *op. cit.*

[2] Carlson, *op. cit.*

A second difference between the insiders and outsiders lies in the type of experience they had before they became superintendents of the school systems with which we are concerned. Every one of the eleven outsiders had held the position of superintendent in some other school system prior to his current appointment. One of the eleven had held four such positions and several others had held two or more such positions. Only three of the eleven insiders had previously been superintendents although almost all of them had been a "deputy" or "assistant" superintendent in their school systems prior to their promotions. Clearly, then, the outsiders are more experienced than the insiders and this, combined with their generally higher educational attainments may account for some of the difference in the innovation levels in their school systems.

But the relationship can be better explained by the racial composition of the schools. If we look at the two variables which we found to be relevant in our analysis above (i.e., percent Black student enrollment and decentralization) the conclusions about insiders and outsiders become less certain. The school systems with fewer Black students were more likely to select outsiders for the position of superintendent than the school systems with large Black student populations. Among the eight "low Black" school systems for which we have data, only one superintendent was an insider; among the 13 "high Black" school systems nine of the superintendents were insiders. When we control for this fact we can see that what may be more important than insider-outsider status is actually the racial composition of the school system itself (Table III.17). Among the high Black school systems, there remains only a slight difference in innovation rates between those school systems run by outsiders and those run by insiders (with only one insider in the low Black school systems we would not want to draw any conclusions). Thus it seems that although there may be differences between insiders and outsiders, these differences may be less significant in urban school systems than those deriving from other factors. The school systems with a small number of Black students may select "outsiders" because they have a commitment to change whereas among the school systems with a greater proportion of Blacks the more frequent selection of insiders may reflect the same inflexible approach to education that makes innovation less of a possibility.

TABLE III.17

MEAN INNOVATION RATES FOR SCHOOL SYSTEM
WITHIN SUPERINTENDENT STATUS (INSIDERS VS. OUTSIDERS)
AND PERCENT BLACK STUDENT POPULATION

	PERCENT BLACK	
Superintendent Status	Low	High
Insider	7.8 (1)	4.1 (9)
Outsider	6.1 (7)	4.9 (4)

The outsiders are, on the whole, somewhat more likely to run their school systems in a decentralized fashion than are the insiders. This may be a result of a greater understanding of what works well. Although with so few cases it is hard to examine the relationship of decentralization to innovation while controlling for the status of the superintendent, we can see in Table III.18 that there is some evidence that both variables are important and that the most innovative school systems are those which are directed by a superintendent from outside who grants considerable autonomy to his individual building principals.

TABLE III.18

MEAN INNOVATION RATES FOR SCHOOL SYSTEM

WITHIN SUPERINTENDENT STATUS AND DECENTRALIZATION SCORES

	Decentralization		
Superintendent Status	Low (Below 4.0)	Medium (4.1 to 5.9)	High (6.0 and over)
Insider	3.3 (1)	4.9 (6)	4.0 (3)
Outsider	3.4 (1)	5.8 (4)	6.0 (6)

Conclusion

Studying and comparing school systems as single units in large cities presents problems not found in studying school systems in smaller, more homogeneous contexts. Only a small portion of the variation among cities can be explained in this manner and what is left is a great deal of variation within each of the cities. Therefore, after reviewing our major findings we will move on to an analysis of the individual schools.

The first major finding is that school systems with significant Black enrollments are, on the whole, less innovative than school systems with predominately white or non-Black enrollments. This relationship remains when we control for a variety of other variables, including some of the traditional indicators of community socioeconomic status. This suggests that the ready availability of money alone will not insure an innovative education system in a city with a complex racial situation. The most innovative systems are not located in cities with the highest standard of living but in those which offer a less troubled environment. And, since we know from our investigation in Chapter II the most worthwhile innovations are not necessarily those which have a high cost, we can argue that school systems with a dedication to experimentation are not hampered by small budgets.

We also have evidence that the relationship between a large Black enrollment and innovation holds within the classification of whether or not the school system has directly confronted problems of desegregation, indicating that the lower rate of innovation is not a temporary condition resulting from a concentration of energies on racial balance. At the same time this does not contradict the assumption that it is the racial problems within these cities that are at the root of their lower innovation scores. Exactly how the racial problem manifests itself in relation to innovation, however, cannot be understood until we examine the distribution of innovations within the cities according to the racial composition of the individual schools. This is the first task of the following chapter.

Our second finding, that parent involvement is related to innovation, is also examined better at the individual school level where we can answer the question of whether the lower rates of innovation in more heavily Black cities are because of lower rates of parental concern in Black or predominately Black schools. We will also consider the impact of parent involvement on the quality of innovations adopted.

A third significant finding is that decentralization, when considered in terms of an actual distribution of decision-making power rather than an ecological arrangement, is positively related to the adoption of innovations. This finding is in accord with much of the theory about the adoption of innovation in other types of organizations and has important implications for the administration of large school systems. When most decisions are made at the central office, long delays between the suggestion of change and its implementation are probably inevitable. And, given the heterogeneity of the populations enrolled in most of these school systems, responsiveness to the needs of any particular population seems most likely if the individuals close at hand can make the relevant decisions. Thus administrators interested in innovation might consider giving principals more autonomy, particularly with respect to those innovations which do not entail budget increases. Our analysis of decentralization will be resumed in Chapter VIII when we examine the effect of the central office policy on the innovation rates of the individual building principals.

We want to comment on our finding that the impact of the status of the Superintendents of large school systems is different that that which has been noted by others. Although we found that superintendents from outside the school system were more innovative than those from inside, it was also apparent that this relationship neither could explain nor was as important as the relationship between the percent of the student enrollment that is Black and innovation. In the large school systems importing a leader from outside is not enough to produce meaningful changes if there are other obstacles.

Finally, it is necessary to note some of the deviant cases in our analysis. Although it is primarily the cities with low Black enrollments which have high rates of innovation, there are several cities with significant Black student bodies which also have extremely high innovation scores: Miami, Oklahoma City and Atlanta. These cities are able to overcome liabilities which impede innovation in other cities and the factors that allow them to do so can only be guessed at here. All three cities are growing, relatively wealthy and contain secure industrial concerns (although to the extent that Miami relies heavily on tourism it may suffer during an inflationary period). Miami and Atlanta both have reputations for innovation, not only in their schools but in their governments as well. Clearly, in each of these cities the school systems are reflecting something not touched on in our data but worth of investigation in the future. Innovation in schools cannot be tied down by statistical correlations so long as cities have distinctive and idiosyncratic features.

CHAPTER IV

THE STUDENTS

In this chapter we describe schools in terms of the students who attend them. The initial portion of the chapter is highly related to and, in fact, to some extent a continuation of what we began in the chapter before this; i.e., we are relating the distribution of innovations to such variables as race and socioeconomic status. However, the focus is somewhat different here. In Chapter III we looked at a city as the environment or supporting community for a school system and took a broad approach which, as we saw, could not satisfactorily explain either the differences between or within the cities. Here our approach is narrower (in that we examine individual schools) and the focus is shifted towards the students (and parents) who, as "clients," attend (or have a deep interest in) these schools.

In the first section of the chapter our view of the students is that they are essentially passive but that the administrative decision to innovate may be determined to some extent by the students' characteristics or their institutional correlates. These charateristics are SES, race and academic quality.[1] There is very little research on this issue and what there is offers contradictory results. Anderson found that teacher resistance to innovation increased with the socioeconomic level of the student body.[2] On the other hand, Smith found that the percent of parents employed as unskilled workers was significantly, negatively related to adaptability in secondary schools. He also found that the percent of pupils enrolled in college preparatory courses was negatively related to adaptability.[1] We find therefore, that the response of schools to different types of students is very little understood, an issue which is important in light of recent claims that school systems make inadequate attempts to improve education in ghetto neighborhoods.

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[1] In the analysis we characterize the student bodies of the schools in a variety of different ways. Although the variables derive from individual student characteristics, they become school characteristics because for each one a single descriptive measure is applied to each individual school. This means that we cannot perform an analysis of the differences in exposure to the innovations for different groups of students within a single school.

[2] James G. Anderson, Bureaucracy in Education (Baltimore: John Hopkins Press, 1968), p. 148

In the second section of the chapter we continue our focus on racial composition but shift towards a consideration of the parents, continuing the investigation of community involvement we began in Chapter III.

In the final portion of the chapter we broaden our classification of schools by the type of student attending them by examining several aspects of the students' relationship to their schools; their morale, the degree to which order and safety is a problem, and student protest. Rather than viewing the students only as passive clients, therefore, we begin to deal with staff-student interactions and examine the relationship between different types of interactions or student responses to the school and the rate at which innovations are adopted within the school. Throughout this section we examine these more dynamic variables within categories of student characteristics.

Throughout this chapter our analysis is enriched by a consideration of the quality as well as the number of innovations adopted. We will be able to describe schools according to the four-fold classification established in Chapter II.[2]

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[1] Sampson Smith, "Pupil Factors Related to the Quality of Education," (unpublished EdD. Project, Teachers College, Columbia University, 1951), pp. 44-45.

[2] We want to make a comment about our point of view. The equality of educational opportunities for all types of students is an area of much fervent

STUDENT CHARACTERISTICS

In the following discussion of the characteristics of the students attending the schools we begin with the racial composition of the schools since race was identified as being highly related to the adoption of innovations among city school systems. We then turn to an examination of the socioeconomic status of the students attending the schools. Although no measure of the wealth of the community was found to be independently related to the adoption of innovations in our city analysis, it is entirely conceivable that the broad view obscured the differences among distinct city neighborhoods. Finally, we will consider the academic quality of the students attending the school, a variable which is likely to be highly related to both race and SES.

Racial Composition of the Schools

Does the racial composition of the student body of a school have any relation to the number of innovations adopted in a school? To answer this question we must first classify schools by the racial or ethnic affiliations of the students attending them. Most of the high schools in our sample do not have significant proportions of students who are not either white or Black. Obviously, as we discussed in the preceding chapter, cities vary in the extent to which

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discussion in America today. We do not at this point want to enter the arena. The adoption of educational innovations is only one of many means through which schools might be attempting to offer students high quality educations. Schools which have low rates of adoption as measured by our index may be restructuring in other vital ways and/or adopting other types of innovations not included in this analysis. To assume, before looking at more data, that a low rate of adoption of innovations means an inequality of educational opportunity is to take one aspect of an educational experience and to draw dramatic conclusions from it.

their populations include other racial groups, but the majority of the schools are either predominantly white or Black or some combination of these two major racial groups, Therefore, for the purpose of this analysis we find it most useful to classify schools by the proportion of either white or Black students and ignore the extent to which other racial or ethnic groups are represented in the student body.[1] Since the proportion of Black students in a school system was shown to be a crucial variable in our analysis above, we will use as our definition of the racial composition of a school the extent to which the student body is composed of Black students. Below we will show that there are important differences between schools defined this way.

In Table IV.1 we show the distribution of schools in our sample by the proportion of students who are Black. As we can clearly see, urban education in America is far from being integrated education in any real sense of the word. Almost three-quarters of all big-city schools were either minimally Black or almost completely Black at the time of our survey. Only 26% of them contain within them anything approaching equal proportions of white and Black students. Interestingly, this pattern exists in most cities, no matter what the actual proportion of Black students in the school system as a whole. As we can see in Table IV.2 the proportion of non-Black or "white" schools drops with each ten percent increase in the proportion of Black students in the school system (or city) population, but the number of integrated schools (schools with 21% to 80% Black students) never make up more than 33% of the total number of

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[1] Only 6% of all schools have significant non-Black minority populations. Of these, there are 20 schools with at least 21% Puerto Ricans. All of these are located in New York City. There are 14 predominately Spanish-American schools, all of which are located in the Southwest. Six schools have predominantly Oriental student bodies, five in Honolulu and one in San Francisco. In the total sample there are 31 schools (5% of the total sample) for which there is insufficient data to classify them by racial composition.

TABLE IV.1

DISTRIBUTION OF SCHOOLS CLASSIFIED BY THE RACIAL COMPOSITION OF THE STUDENT BODY

Racial Composition of the Student Body	Percent of Schools	(N)
White (less than 20% Black)	54%	325
White Integrated (21 to 50% Black)	20	124
Black Integrated (51 to 80% Black)	6	41
Black (over 80% Black)	20	122
	100%	(612)

TABLE IV.2

PERCENT OF SCHOOLS IN EACH RACIAL COMPOSITION CLASSIFICATION BY THE PROPORTION OF THE ENTIRE SCHOOL SYSTEM ENROLLMENT THAT IS BLACK

	PROPORTION OF BLACK STUDENTS IN THE CITY SCHOOL SYSTEM			
Racial Composition of the Schools	20% or less	21-30%	31-40%	Over 40%
White	87%	57%	52%	32%
White Integrated	9	30	18	17
Black Integrated	3	6	4	12
Black	1	7	26	39
	(100%)	(100%)	(100%)	(100%)
Number of Schools	89	204	134	179
Number of Cities	10	11	11	11

schools as the difference is made up in the percentage of schools which are predominantly Black. Enough has been said about segregation in American education that we need not belabor this point here. Our concern is in finding out whether differences in the racial composition of the schools are related to differences in the rate and/or discrimination with which innovations are adopted in the schools.

For ease of comprehension, we will label each of the four types of school according to the proportion of the student body that is Black. The schools which contain less than a 20% Black population we will call White schools since in 70% of these schools the (remaining) population is white. The second group -- those with Black student populations comprising between 20 and 50% of the total -- we will call the White Integrated schools. In 63% of these schools the populations is predominantly white with a Black minority. The remaining 37% of the schools include some other sizeable minority group. The third group of schools we will call the Black Integrated schools. Only 24% of these schools include students which are neither white nor Black. And finally, the fourth group we call the Black schools; the enrollment in these is at least 80% Black.

The racial composition of the schools is related to innovation in a peculiar manner. As we can see in Table IV.3 there is very little difference in innovation rates between three of the four types of schools identified above. However, the White Integrated schools have considerably lower innovation rates than the other types of schools. This datum suggests that the problem is not simply one of unequal administrative efforts to alter the education of Black students, since schools with higher proportions of Black students are more innovative than schools in which the Black students make up a significant minority. What we find is that one type of school -- the White Integrated

TABLE IV.3

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED BY RACIAL COMPOSITION OF THE SCHOOLS

Racial Composition of the Schools	Innovation Rate				Mean Number of Innovations Adopted[1]	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopt.'d[2]	(N)
	Low	Medium	High					
WHITE	26%	45	29	(100%)	4.9	43%	47.7	(324)
WHITE INTEGRATED	38%	47	15	(100%)	3.8	25%	37.9	(124)
BLACK INTEGRATED	24%	44	32	(100%)	4.9	32%	43.9	(41)
BLACK	29%	48	23	(100%)	4.6	30%	40.9	(122)

[1] Mean number of innovations adopted for this population of schools is 4.5.

[2] Mean proportion of quality innovations adopted for this population of schools is 44.1.

schools -- are less likely to have high innovation rates than any other type of school.

When we examine the question of the quality of the innovations adopted the picture becomes more meaningful. The White schools pose no problem of interpretation. They are the "pacesetter" schools, adopting innovations at a relatively high rate and exercising discrimination in the process. This suggests a stable, long-term policy of adoption during which innovations of low quality have been discarded.

The Black and Black Integrated schools are almost as high on the mean number of innovations adopted but in these cases the adoption is less carefully worked out suggesting less clear direction or, perhaps, less time during which the administrators have made decisions. One hypothesis is that these schools have only recently begun to innovate, perhaps as a result of federal funds, and therefore have not worked out adequate procedures for checking the appropriateness of the innovations adopted. The White Integrated schools are, relative to an absolute standard (i.e., the means for the entire population), low on both adoption and the quality of the innovations adopted, indicating administrative negligence.

In this chapter we will begin a search for explanations for this difference in innovation rates and the "style" of the adoption of innovation among the four types of schools by examining the types of students who attend them, and whether the racial composition of the schools have recently undergone a dramatic change. In later chapters we will introduce other (non-student-related) variables describing the schools.

First, however, we want to know whether this pattern accounts for our finding in Chapter III that cities with few Black students are more innovative.

Since cities with a larger proportion of Black students are more likely to have integrated schools, it is conceivable that the lower mean innovation rates among these cities could be explained by the presence of a certain type of school which uniformly has a lower innovation rate. However, the fact that White Integrated schools generally have fewer innovations than schools with other racial mixtures does not totally clarify our finding that school systems with larger proportions of Black students have lower innovation rates than school systems in which Black students constitute less than 20% of the total student enrollment. (cf. Table IV.4) The cities with less than 20% Black students contain more highly innovative schools than the other cities no matter what type of school (as characterized by racial composition) one examines. The clearest figures -- because of the small number of schools in some categories -- are for the predominantly white schools: in the ten cities with small Black student populations, over 70% of these schools are highly innovative versus 40% of similar schools in the other thirty-three cities. The high innovation rates in cities with small Black student populations exist when we control for type of school. Therefore, the explanation for the difference between type of city (as defined by racial composition) is not as simple as the fact that one type of school has lower innovation rates. However, this finding does not contradict our assertion that the differences between the two types of cities is largely because of the racial factor although the assumption remains that the problem originates at the school system level rather than at the individual school level. We will return to this point after completing our analysis of student characteristics.

TABLE IV.4

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES CONTROLLING FOR THE PERCENT OF SCHOOL SYSTEM ENROLLMENT THAT IS BLACK AND PERCENT OF SCHOOL THAT IS BLACK

Racial Composition of Schools	Proportion of Black Students in School System	
	Less than 20%	Over 20%
WHITE	71% (71)	43% (243)
WHITE INTEGRATED	62% (8)	27% (116)
BLACK INTEGRATED	* (3)	48% (37)
BLACK	* (0)	44% (121)

*There are too few cases on which to base a percentage.

Change in Racial Composition

One possible explanation for the differences in innovation rates between the four groups of schools classified by racial composition is that schools which are integrated had recently undergone a racial transformation and that the upheaval might have required making adjustments in staff and curriculum for a new type of student body, leaving little time or energy for the adoption of innovation. In other words, it is possible that change in one aspect of a system might constrain change in other areas. On the other hand, change in the "needs" of the clientele might be an impetus for the adoption of innovation in organizations as traditional methods become less appropriate and there is the possibility of success from new approaches.[1]

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[1] For a further discussion of the effects of change in clients on the adoption of innovations, see Zaltman, op. cit., p. 110.

We can identify the schools which have recently undergone racial transformations by dividing the schools into the same four types according to their racial composition in 1960 and seeing which schools changed categories in the eight-year period prior to the NASSP survey. As we can see in Table IV.5 almost 75% of the schools for which we have the relevant data remained stable in their racial composition. In only three schools there were fewer Black students in 1969 than in 1960. These three schools are omitted from our analysis below.

The differences in the adoption of innovations found between the types of schools cannot be explained by the fact that the populations in some schools are changing. Schools which have an increasing proportion of Black students are no less (or more) likely to be innovative than those which have remained stable over the eight-year period. Reading across Table IV.6 we find no differences between the schools which have recently changed and those which have had a more or less stable student population. The twenty-five schools which have between 50% and 80% Black students were previously White Integrated schools. The proportion of these schools with high innovation rates is the highest for any type of school which indicates that whatever factors constrain innovation in the White Integrated schools, they do not persist beyond the point when the racial balance of these schools shifts towards a majority of Black students. Similarly, almost all of the White Integrated schools were previously "white" schools. They show no "benefits" of their prior status.

The implication is that the differences between the integrated schools and the other schools is not the result of a crisis situation surrounding recent integration.

We now want to ask whether the racial composition of the school is actually determining the differences in innovation rates or whether there is some

TABLE IV.5

CLASSIFICATION OF SCHOOLS

BY 1960 AND 1968-69 RACIAL COMPOSITION

	1960 Racial Composition				
1968-69 Racial Composition	White	White Integrated	Black Integrated	Black	(N)
White	241	1	0	1	(243)
White Integrated	65	38	1	0	(104)
Black Integrated	9	16	8	0	(33)
Black	15	9	15	69	(108)
N =	(330)	(64)	(24)	(70)	(487)

Stable Racial Composition: 356 schools or 73% of Total

Higher Proportion of Blacks in 1968-69: 128 schools or 26% of Total

Lower Proportion of Blacks: 3 schools or 1% of Total

TABLE IV.6

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

CONTROLLING FOR RACIAL COMPOSITION AND CHANGE THEREOF

	Racial Composition Between 1960 and 1968-69	
1968-69 Racial Composition	Stable	Change
White	49% (241)	--
White Integrated	32% (38)	29% (65)
Black Integrated	50% (8)	52% (25)
Black	41% (69)	46% (39)

other student characteristic highly related to race which may be underlying these differences. We look first at the socioeconomic status of the student body since we know that race and SES have high correlations in American society as a whole. It is possible that integrated schools are found only in low SES neighborhoods and that these distinctions are really class distinctions and not due to the racial composition of the school at all. We are also interested in knowing whether there are differences between schools on the basis of the socioeconomic status of the students independent of the possible relation of this variable to the racial composition of the schools. Following our analysis of class differences among the schools we will examine the academic performance of the students enrolled in these schools. This is another variable we are concerned with both in its own right and because of its probable relation to both SES and race.

Socioeconomic Status

More prevalent than race as a factor describing students in the sociology of education literature has been the variable of social class. Social class has been shown to be related to almost every dimension of a student's relation to his school: achievement, aspiration, participation in extra-curricular activities, etc. Furthermore, it has been argued that there are great differences in the quality of education available to students in different social classes. We are interested here in finding out whether one of these differences is the opportunity to attend a more innovative school.

The principals who filled out the NASSP questionnaires were asked in two questions to describe the students attending their schools in terms of their socioeconomic status. Since the two questions are highly correlated ($r = .49$) we combined them to form a single indicator of social class by adding the scores

TABLE IV.7

ITEMS USED FOR SES INDEX

How would you characterize your school on the basis of the socio-economic conditions of the students enrolled:	Percent of Schools	N	Index Score
An upper-middle class school	14%	91	3
A "Common-man" or lower-middle and upper-working class school	35%	228	2
A cross-sectional school, representative of your whole city population	26%	172	0
A manual working class school	25%	167	1

The percentage of the entering class that would be considered seriously disadvantaged socio-economically, using $2000 to $3000 annual income or comparable criteria is:	Percent of Schools	N	Index Score
0 - 10%	57%	375	3
11 - 20%	17%	108	2
21 - 30%	10%	65	1
31 - 40%	5%	36	0
41 0 50%	4%	23	
51 - 60%	3%	19	
61 - 70%	2%	12	
71% or more	2%	15	
	100%	(653)	

for each question. The questions, the distribution of schools among the responses and the scores for the responses (used to combine them into an index) are all presented in Table IV.7. The distribution of schools along the single variable is presented in Table IV.8 along with the cut-off points with which we divided the schools into three groups of High, Medium and Low socioeconomic status.

TABLE IV.8

DISTRIBUTION OF SCHOOLS

BY SOCIOECONOMIC STATUS OF STUDENTS

Socioeconomic Status	Range of Scores	Percent of Schools	N
HIGH	5-6	35%	221
MEDIUM	3-4	34%	215
LOW	0-2	31%	178
		(100%)	(614)

In Table IV.9 we show the relationship of our social class descriptions of the schools to the rate at which these schools adopt innovations. As we can see, social class is slightly related to innovation rates. The high SES schools are more likely to have high innovation rates than are the low SES schools. They are also more likely to be discriminating though the major difference is between the very "low" and the two higher groups. Low SES schools adopt fewer innovations and adopt more "randomly" than higher SES schools.

As we might expect, the social class description of the schools is closely related to their racial compositions. The higher the proportion of Black students in a school, the more likely the principal is to describe the

TABLE IV.9

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED

BY SOCIOECONOMIC STATUS OF STUDENTS

SES	Innovation Rate				Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
	Low	Medium	High					
HIGH	25%	45	30	(100%)	4.9	37%	46.4	(221)
MEDIUM	28%	45	27	(100%)	4.8	39%	45.7	(215)
LOW	34%	48	18	(100%)	4.0	32%	40.3	(178)

majority of the students as being working class with a high proportion of economically disadvantaged students. (See Table IV.10.)

TABLE IV.10

RACIAL COMPOSITION OF SCHOOLS BY SOCIOECONOMIC STATUS

Racial Composition of Schools	Socioeconomic Status of Students: Low	Medium	High
WHITE	17%	54%	86%
WHITE INTEGRATED	29%	26%	9%
BLACK INTEGRATED	11%	8%	--
BLACK	43%	12%	5%
	100%	100%	100%
N =	(198)	(224)	(220)

Since these two variables of racial composition and social class are related to each other and to innovation rates independently, we need to ask about their joint effects. In Table IV.11 we show the proportion of schools with high innovation rates within the categories of racial composition and social class characterization of the schools. Interestingly, we find that the effects of social class on the number of innovations adopted are not uniform for the different types of schools.

TABLE IV.11

INNOVATION RATES AND MEAN INNOVATION SCORES WITHIN SES AND RACIAL COMPOSITION CATEGORIES

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

	SES		
Racial Composition of Schools	Low	Medium	High
WHITE	42% (26)	47% (11)	55% (178)
WHITE INTEGRATED	23% (37)	37% (51)	33% (18)
BLACK INTEGRATED	55% (20)	42% (19)	* (2)
BLACK	45% (73)	52% (29)	27% (11)

5% (40)

MEAN INNOVATION SCORES

	SES		
Racial Composition of Schools	Low	Medium	High
WHITE	4.1 (26)	5.1 (11)	5.0 (178)
WHITE INTEGRATED	2.9 (37)	4.5 (51)	4.8 (18)
BLACK INTEGRATED	5.0 (20)	4.5 (19)	* (2)
BLACK	4.5 (73)	4.8 (29)	3.8 (11)

4.5 (40)

*There are too few cases on which to base a percentage or a mean.

Among the White schools the socioeconomic status of the students remains related to innovation rates: the richer the clientele and, by extension, the surrounding neighborhood, the more likely that the schools will adopt innovations. This finding is not surprising as it confirms expectations of how class operates in American society. However, among the other three racial types of schools the relationships are not so clear. In the White Integrated schools, social class is also related to innovation (although there is some evidence that in these schools a middle SES group does better) indicating that whatever factors constrain the likelihood of the adoption of innovation in these schools they are more extreme in the low SES schools. This suggests either the availability of special resources or some form of social relationships in the school. Among the Black Integrated schools there is slight evidence that SES is negatively related to the adoption of innovations, which suggests that there is some form of "social intervention" creating a reversal of traditional relationships. Finally, in the Black schools we have difficulty in discerning any relationship at all since if we combine the upper two SES groups the average innovation rate is equal to that in the lower group. Again this suggests some form of compensatory input since one assumes otherwise the lower SES Black schools would have far lower innovation rates than the other two groups of Black schools.

There are two additional points to be made. First, we can see that controlling for SES does not change the pattern of adoption we found when we looked at the racial composition of these schools alone. The White Integrated schools almost always have the lowest rate of adoption, the only exception being the High SES Black schools of which there are a very small number. Second, our findings suggest that in inner city school systems, "class" is a less important or consistent determinant of the adoption of innovations than is race. Therefore, one must always distinguish between studies which consider racially homogeneous communities and those which focus on areas in which race is likely to be a key factor.

Academic Quality

Schools vary widely in the academic quality of the students attending them. Some schools send most of their students to four-year colleges and some even limit enrollment to gifted students. Other schools are attended primarily by students far below national standards in reading, etc. and whose high school education consists mainly of vocational courses. To some extent, these extreme variations in types of student bodies are determined in advance, by the existence of different types of schools for different types of students.[1] However, as we will see below, most schools in our sample are "comprehensive" high schools which are meant to provide an adequate educational experience for a broad spectrum of students. And, among these schools as well we find great differences in the general level of academic ability in the student body.

For purposes of analysis we have created a measure of the academic quality of the students attending each school. Like the other measures used throughout this and following chapters it is a measure of central tendency, a single measure which describes the student body without taking into account the range of abilities in the school. When we identify a school as being attended by "average" students this does not mean that there are no students far above or far below this mean.

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[1] In Chapter VI we will consider the variable of type of school by examining differences in innovation rates among Academic, Vocational and Comprehensive schools.

The measure of academic ability we use is a combination of three separate questions asked in the NASSP survey. The three questions each relate to somewhat different aspects of academic ability. They are shown in Table IV.12 along with the distribution of responses and the scoring of the responses with which they were combined to form a single index. The correlations between these questions is also given in Table IV.12.

The first question asks for an assessment of the innate ability of the students and leaves the definition of the term "educationally gifted" up to the principal. The second taps a facet of achievement -- reading -- which may be determined by any of a number of factors: innate ability, prior educational experiences, family background, etc. The third, in a roundabout fashion asks for the proportion of students who are in college preparatory programs. Thus it too can be thought of as a measure of ability, achievement as well as aspiration.[1]

The indicator of academic ability obtained by combining these three questions is presented in Table IV.13 along with the cut-off points with which we divide the schools into four types ranging from High to Low academic quality of the students. It should be remembered that the index itself has no intrinsic meaning and cannot be thought of as being analogous to any of the particular items from which it is composed. It is not a measure of ability, achievement or aspiration, but a combination of the three.

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[1] The proportion of students enrolled in a college preparatory course is not necessarily an indicator of the proportion of students who will actually attend college. As has been noted by Schrag, schools frequently enroll a significantly higher proportion of students in college preparatory programs than actually ever apply to or are admitted into four-year colleges. Peter Schrag, Village School Downtown (Boston: Beacon Press, 1967) p. 89.

TABLE IV.12

ITEMS USED TO CREATE ACADEMIC QUALITY INDEX AND CORRELATION

The percentage of the student population properly described as being educationally gifted is:	Percent of Schools	N	Index Score
0 - 6%	51%	335	0
6 - 10%	28%	183	1
11 - 15%	12%	77	2
16 - 20%	4%	27	
21 - 25%	1%	7	
26% or more	4%	24	
	100%	(653)	

The percentage of the entering class that is two years or more retarded in reading is:	Percent of Schools	N	Index Score
0 - 10%	32%	211	0
11 - 20%	25%	160	1
21 - 30%	14%	91	2
31 - 40%	8%	53	
41 - 50%	8%	54	
51 - 60%	6%	39	
61 - 70%	4%	23	
71% or more	3%	21	
	100%	(652)	

TABLE IV. 12

The percentage of an average entering class in courses assumed to be expected by four-year colleges of students applying for freshman admissions is:	Percent of Schools	N	Index Score
- 10%	7%	45	0
11 - 20%	8%	50	
21 - 30%	12%	79	
31 - 40%	14%	90	
41 - 50%	11%	72	1
51 - 60%	13%	83	
61 - 70%	12%	78	
71% or more	23%	150	2
	100%	(647)	

Pearson Correlations of Three Academic Quality Indicators	% Reading Retardation	%College Preparatory
Percent Educationally Gifted	.31	-.38
Percent Reading Retardation	--	-.31
Percent College Preparatory	--	--

TABLE IV.13

DISTRIBUTION OF SCHOOLS IN CATEGORIES OF ACADEMIC QUALITY

Academic Quality	Range on Scale	Percent of Schools	N
High Academic Quality	5-6	15%	97
Moderately High Academic Quality	3-4	30%	192
Moderately Low Academic Quality	1-2	35%	224
Low Academic Quality	0	20%	124
		100%	(637)

Having defined our variable, we now ask how it is related to the adoption of innovations. We have two distinct concerns. First, we want to know whether the generalized academic quality of the student body has any relation to the total number of innovations implemented in a school. Second, we want to see how this feature of schools relates to their class and racial composition descriptions and whether academic ability has any independent effects on the adoption of innovation.

First, looking at the relation of the overall rate of innovation and academic quality, we find that there are differences which show up at the extreme. (See Table IV.14.) Schools which have high quality students and schools which have low quality students have fewer innovations than schools whose students fall somewhere between these extremes. This suggests that the impetus for innovation develops in situations which are less clear and where administrators perceive a greater potential for a change in performance through innovation.[1] Once administrators have labelled students as "losers" they may no longer try to change the situation but operate their schools as a "holding" operation, passively observing students come and go. The schools at the other extreme are also low on innovation for somewhat similar reasons. Here the administrators again are dealing with an easily labelled group of students but in this case, as their routines are generally successful, there is no reason to change and reach for variety.

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[1] A similar phenomenon has been noted by Caplow:
Another source of instability is the tendency for decisive innovations

Interestingly, it is only the schools with students in the lowest academic grouping which are also low on the quality of the innovations adopted. In these schools in which innovation is generally low, it is also a poorly thought-out process and incorporates many innovations which are of low quality as assessed by the judges. There may be another factor at work here. To the extent that the judges differentiated among the innovations along the lines of the type of students for which they were most appropriate, they indicated a belief that the more mechanistic innovations (programmed instruction and teaching machines) would have more value for less academically gifted students and that the

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> to enter the institutional pattern through organizations of intermediate prestige. This tendency admits of many exceptions and is difficult to describe because it has not yet been studied in detail. Innovations introduced in an organization of intermediate prestige are often then adopted by imitators adjacent prestige levels, taken up after considerable lag by some of the leaders in the set and, finally (by being incorporated in the institutional pattern), diffused downward to the remaining members of the set. This path has been followed again and again in the introduction of new academic subjects into the college and university curriculum. New subjects are usually introduced on the restless campuses of middling colleges and universities. Some of them die there; others are imitated on adjacent levels of academic prestige; while a few are ultimately adopted by one or another of the great universities and then diffuse downward again to become standard subjects in every curriculum. The leading universities, which are not usually associated with this missionary effort, may be the last finally to adopt the new subject. . . . Similar sequences of adoption can be traced in their respective sets for such varied innovations as automation in steel-making, the double-wing back formation in football, and cost accounting in hospitals.

Theodore Caplow, Principals of Organization (New York: Harcourt, Brace and World, Inc., 1964), pp. 207-208.

TABLE IV.14

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED

BY ACADEMIC QUALITY OF STUDENTS

Academic Quality	Innovation Rate Low	Innovation Rate Medium	Innovation Rate High		Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
Very High	27%	57	16	(100%)	4.2	41%	46.4	(92)
Moderately High	24	46	31	(100%)	5.0	35	45.2	(183)
Moderately Low	27	45	28	(100%)	4.9	41	46.5	(215)
Very Low	38	43	19	(100%)	3.9	25	39.0	(119)

innovations which depended more on the students' commitment (independent study and directed study) would be of more value for the more talented students.[1] Therefore, the schools with low academic quality students may be caught in the middle of a conflict in the educational establishment. To the extent that they search for innovations which are appropriate for the talents of their students they are directed towards innovations which the same judges feel are of low educational worth. The schools at the other extreme -- the high academic quality schools -- do not face the same problem. In these schools there is little impetus for change, and when it does occur, it comes with regard to innovations of the highest quality. For these schools the indications of appropriateness are in tune with quality. The two middle groups of schools are high on both adoption and quality. Innovation is frequent in these situations and occurs with a relatively high degree of discrimination.

The basic relationship between academic quality and the adoption of innovations persists when we control for either the racial composition or the socioeconomic status of the student body, although there are minor changes which we will discuss below. Looking first at the racial composition of the schools, we find that the principals' assessments of the academic quality of the students is highly related to race, the most dramatic differences occurring between the White schools and the other three types (Table IV.15).[2] Almost two-thirds of the White schools are composed of students of above average academic quality (combining the top two groups) whereas even higher proportions of the other three types of schools are composed of students the principals consider to be below average. If we look at innovation rates, within our classifications of Racial composition and academic quality, we can see that within each of the racial types of schools there is a curvilinear relationship between academic quality and the adoption of innovations but that the definition of "average" shifts down somewhat as we move from White to Black schools (Table IV.16).

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[1] This issue is discussed in Appendix G.

[2] The extreme relationship makes us question the principals' judgments. It is possible that the principals are looking at the color of the skin first and then making assessments of the academic quality of the students.

TABLE IV.15

RACIAL COMPOSITION OF SCHOOLS BY ACADEMIC QUALITY

	Racial Composition			
Academic Quality	White	White Integrated	Black Integrated	Black
Very High	25%	5%	5%	0%
Moderately High	40%	19%	25%	18%
Moderately Low	28%	44%	45%	43%
Very Low	7%	32%	25%	39%
	100%	100%	100%	100%
N =	(332)	(124)	(40)	(110)

Similarly, we find that the Socioeconomic characterization of the schools is highly related to the assessments of the academic performance of the students (Table IV.17). Moreover, within the different schools as defined by social class of the students, we find the same relationship between academic quality and innovation (Table IV.18). Accepting again a "shifting" definition of "average" we find that innovation is more likely in the schools characterized by students of "average" academic ability. Moreover, we can see that among the schools with very low and moderately low academic student bodies, social

TABLE IV.16

INNOVATION RATES AND MEAN INNOVATION SCORES

WITHIN RACIAL COMPOSITION AND ACADEMIC QUALITY CATEGORIES

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

	Racial Composition			
Academic Quality	White	White Integrated	Black Integrated	Black
Very High	33% (78)	30% (30)	37% (11)	33% (30)
Moderately High	62% (125)			
Moderately Low	49% (92)	37% (51)	50% (18)	59% (49)
Very Low	30% (24)	25% (36)	60% (10)	36% (43)

MEAN INNOVATION SCORES

	Racial Composition			
Academic Quality	White	White Integrated	Black Integrated	Black
Very High	4.1 (78)	4.2 (30)	4.3 (11)	3.8 (30)
Moderately High	5.4 (125)			
Moderately Low	5.1 (92)	4.4 (51)	5.4 (18)	5.0 (49)
Very Low	4.3 (24)	3.1 (36)	4.8 (10)	4.1 (43)

TABLE IV.17

SOCIOECONOMIC CHARACTERIZATION OF SCHOOLS BY ACADEMIC QUALITY

	SES		
Academic Quality	Low	Medium	High
Very High	0%	14%	29%
Moderately High	11%	33%	42%
Moderately Low	41%	41%	25%
Very Low	48%	12%	4%
	100%	100%	100%
N =	(174)	(221)	(227)

class is a less important determinant of innovation than it is among the other two types of schools. This finding supports our earlier assertion that in urban environments racial issues have become paramount, obscuring some social class distinctions.

In summing up this section we want to comment further on the differences in innovation rates we found among the four types of schools and relate this to our most significant finding in Chapter III. As we have noted, White schools are, in accordance with our expectations and assumptions about the distribution of socially valued resources, generally high on the adoption of innovations and particularly so when the students come from well-off families. As we go further on our analysis we will see that innovation in these schools is often influenced by a different set of factors than it is in the other three types

TABLE IV. 13

INNOVATION RATES AND MEAN INNOVATION SCORES WITHIN SES AND ACADEMIC QUALITY CATEGORIES

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

	SES		
Academic Quality	Low	Medium	High
Very High	--	31% (29)	44% (62)
Moderately High	44% (18)	47% (70)	58% (14)
Moderately Low	46% (68)	51% (87)	51% (55)
Very Low	35% (81)	40% (25)	40% (10)

MEAN INNOVATION SCORES

	SES		
Academic Quality	Low	Medium	High
Very High	--	4.2 (29)	4.9 (62)
Moderately High	4.9 (18)	5.0 (70)	5.5 (14)
Moderately Low	5.0 (68)	5.3 (87)	5.3 (55)
Very Low	4.3 (81)	4.5 (25)	4.5 (10)

of schools.

The high rate of innovation in the Black and Black Integrated schools becomes somewhat more comprehensible if we relate it to the political pressures on administrators during the 1960's to demonstrate a commitment to equal education for Black students since other research has shown that Black schools had somewhat less adequate resources than White schools -- e.g., older buildings, fewer textbooks, less well qualified teachers -- through the middle of the 1960's.[1] If in 1969 these schools had as many innovations as the white schools, it can be argued that this was because of a combination of a new availability of money and an intensive social pressure to upgrade ghetto education. This argument derives weight from the fact that the expected relationship between SES and innovation is not sustained among these schools. It is also supported by our finding that the quality of innovations adopted in these schools was relatively low. Innovations may have been introduced with haste and without careful consideration of quality, a major emphasis, perhaps, being on the visibility of the innovations implemented rather than their educational value. Below we will investigate further the differences between the Black Integrated and the Black schools as well as some of the factors which determine the rate of innovation within each of these types of schools.

It is the finding that the White Integrated schools generally have a low rate of innovation, and a poor quality of innovation, that is in some ways the most disturbing and yet understandable in terms of the priorities discussed above. If there has been a silent group in cities it may well be composed of families living on the borderline of ghetto areas, tied together as much by their fears of Black dominance in the schools and neighborhoods as by a common ethnic past. To complain about the schools would be to focus attention on them. And, in cities like Boston, parents in such communities have been more relieved that their schools have maintained a White dominance than concerned about the fact that the quality of education has been poor.

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[1] e.g., James Coleman, Equality of Educational Opportunity (U.S. Government Printing Office, 1966).

This analysis of innovation as being partially a response to an increasing awareness of the inequalities of urban education and pressures for change may help to clarify some of the basic differences we found between the thirty-three cities with larger Black enrollments and the other ten cities. As we noted above, the difference remained even when we controlled for the type of school within the cities and was most visible among the White schools. If we assume that the efforts in the cities with large Black populations were directed primarily towards the predominately Black and all Black schools, then it is logical to assume that other parts of the system might have fallen back somewhat. The push to upgrade the Black schools left the White Integrated schools in a depressed state and the predominately White schools falling behind the level of their counterparts in other cities. The legacy of negligence ultimately had an impact on every type of school -- White, Integrated and Black.

Our basic finding about the distribution of innovations by racial composition thus may only be fully understood by considering decisions made at the central office level of the school system and cannot be so pursued with the data at hand. But there are other questions to be answered. What types of schools, within these broad classifications of racial composition, were most likely to be innovative? Under what condition is the relationship between race and innovation most likely to be sustained? Are there any other patterns to be perceived?

One general pattern we have already noticed is that the academic quality of the student body is an important determinant of innovation: schools at the extreme ends of this variable have lower innovation rates than schools somewhere in the middle. The introduction of an innovation may involve risk (e.g., students may not do as well after a series of courses by team teaching as they would have with individual teachers) and potential loss of prestige for the adopting institution. Thus administrators seem to feel that it is safer to experiment where there is less at stake. Just as major universities may be reluctant to adopt a new course lest it turn out to be just a fad, so elite schools -- those with students of the highest academic ability -- may be reluctant to adopt educational innovations lest they prove unsuccessful. The persistance of this relationship between academic quality and innovation when we control for either race or SES and the fact that similar relationships have been noted in a wide range of types of organizations indicates that it is of considerable importance.

COMMUNITY INVOLVEMENT

With our classification of schools (and by extension neighborhoods) we can further investigate the relation of parent involvement to the adoption of innovations in schools which we began in Chapter III. As we noted above, although parent involvement is strongly related to the adoption of innovations, we do not know whether the adoption of innovations is in response to parent concerns or pressures, or whether the decision on the part of schools to permit parent involvement is generated from the same underlying climate as that which determines the adoption of innovations. It is conceivable that a school with a serious commitment to its students would express this commitment both through the adoption of innovations and through efforts to involve the surrounding community in the educational process.

Community involvement in schools has been for some time a subject of heated debate, particularly during the late 1960's when in New York, for instance, the issue of local control became paramount. Professional educators are sometimes reluctant to relinquish any control over their schools, perhaps out of a fear that any crack in their armor will leave them in a totally defenseless position. And, their fears are, to some extent, supported by the writings of educational theorists and practitioners. Brickell, for instance, found that although parents are not usually concerned with decisions affecting the school, when they do exert themselves their influence is decisive.[1] Similarly, Mackenzie found that the community was often a very powerful participant in the change process, operating through citizens' groups, Parent-Teacher

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[1] Henry M. Brickell, Organizing New York State for Educational Change (Albany, New York: State Education Department, 1961), p. 20.

Associations, and regular school elections.[1] Moreover, it has been aruged by Sieber that the effects of parental influence can be deleterious to the process of innovations. First, he argues that "changes in practice that run the risk of disturbing the local community are eschewed," and second, that "innovations are adopted which are promoted by local publics. Indeed, political feasibility often carries greater weight than does educational value."[2]

As we can see in Table IV.19 although parent involvement is strongly related to the number of innovations adopted in a school, it is only slightly related to the discrimination with which the adoption process is carried out. Thus while we cannot argue that parent involvement is related to discrimination, we can certainly assert that it is not antithetical to discrimination. A high degree of parent involvement in the schools does not necessarily result in a lower quality of educational innovation.

The degree to which parents are involved in the schools differs by the racial composition of the schools or neighborhoods but, as we will see below, this factor explains relatively little about the relationship between race and innovation.[3] Parent involvement is highest in the Black schools (56% High) and second highest in the Black Integrated schools (48% High) perhaps as a result of the recent upsurge of ethnic awareness among Blacks. Only 42% of

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[1] Gordon N. Mackenzie, "Curricular Change: Participants, Power and Processes," Innovation in Education, ed. Matthew Miles (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 412.

[2] Sam D. Sieber, "Organizational Influences on Innovative Roles," Knowledge Production and Utilization in Educational Administration, ed. Terry L. Eidell and Joanne M. Kitchel (Columbus, Ohio: University Council for Educational Administration and Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1968), p. 122.

[3] Parent involvement is not significantly related to either SES or Academic Quality. Therefore these variables will not be included in the following discussion.

TABLE IV.19

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED

BY COMMUNITY INVOLVEMENT

Community Involvement	Innovation Rate				Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
	Low	Medium	High					
VERY HIGH (7-9)	19%	46	35	(100%)	5.4	40%	46.5	(121)
MODERATELY HIGH (5-6)	25%	45	30	(100%)	5.1	38%	44.3	(158)
MODERATELY LOW (2-4)	31%	47	22	(100%)	7.4	37%	43.9	(169)
VERY LOW (0-1)	36%	47	17	(100%)	3.9	35%	43.3	(189)

the White schools have a high degree of parent involvement, contradicting traditional notions that it is the white parents who are most concerned about education. The parents of students who attend these schools may, while maintaining a concern for the education of their children, feel much less impetus to become deeply involved as they can perceive that they have been served well over the years. Among the White Integrated schools parent involvement is considerably lower than among any other group (34% High). As indicated above, many of these schools are probably located in old, working-class (ethnic) neighborhoods. These neighborhoods have neither achieved the same sense of self-awareness as the Black communities which would lead them to concern with the schools nor developed the white middle-class know-how to make their concerns felt. Moreover, as we suggested before, in such areas an awareness of inadequacies in the quality of education may well be overshadowed by fears of busing. As long as these fears are dominant, little attention will be paid to the actual quality of the educational experience being offered in these schools.

Parent involvement has a different impact within the different types of schools. It is most highly related to innovation in the Integrated schools (both White and Black), considerably less strongly related in the White schools, and only minimally related among the Black schools. (Cf. Table IV.20) In fact, when there is a high level of parent involvement in the White Integrated schools they no longer trail so far behind all the other schools. Thus we can conclude that, in part, the low rate of innovation in these schools is related to a low level of pressure for change. These schools are overlooked so long as there is little impetus from outside to consider them more closely. Under the condition of high parent involvement the Black Integrated schools become the most highly innovative. Parent involvement may be viewed by administrators as a demand for change. The demand is met, perhaps, with eye-catching innovations.

TABLE IV.20

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES WITHIN CATEGORIES OF COMMUNITY INVOLVEMENT AND RACIAL COMPOSITION

	Racial Composition			
Community Involvement	White	White Integrated	Black Integrated	Black
High	58% (140)	46% (45)	65% (20)	48% (62)
Low	44% (185)	20% (79)	38% (21)	41% (60)
Percent Difference	+14%	+26%	+27%	+7%

The fact that parent involvement has less of a relation to innovation in the all White and all Black schools may be because the pressures here are more specific. The white parents may be far more traditional in their approach to education and may have as their primary concerns the availability of courses which will most adequately enable their students to compete for high status colleges. And the Black parents may be more interested in confronting racism through the introduction of courses dealing with Afro-American culture. In these communities where parent involvement is highest, it does not necessarily result in the adoption of innovations.

STUDENT COMMITMENT

It is common knowledge that urban schools frequently have intense social problems. Vivid portraits of such problems are portrayed in popular literature (e.g. Blackboard Jungle) and movies (e.g. Up the Down Staircase) and the most dramatic stories are written up in the national and local press. The social problems vary from school to school in both intensity and form. In some schools there is a constant threat of physical violence in the form of attacks of students on other students (frequently racially motivated) or attacks of students on teachers. In other schools the problem may be less one of personal safety than one of apathy and a lack of commitment. And during the late 1960's many schools were confronted by the phenomenon of student protest which ranged from verbal to physical assaults. Many schools, of course, confront more than one of these problems and, in fact, it is rare that student disruption is limited to a single form.

In this section we want to investigate these school climate factors more closely and see whether there is any relation between the form or intensity with which they arise and the rate at which the schools adopt educational innovations. We consider two types of factors: student morale or commitment to the organization, and problems of maintaining order and safety.[1] In dealing with these climate features we do not know what the actual time sequence is, i.e., whether the climate is influenced by the adoption of innovations or whether the adoption of innovations is a response to the school climate. Therefore, in our discussion below we will be unable to draw any conclusions about causal relationships although we may make some inferences or hypotheses about whether innovation is, in fact, a cause or effect.

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[1] These concepts are further defined below.

Morale

Students can demonstrate low morale or commitment to the school they attend in several different ways: they can drop-out, transfer, or attend sporadically. How the school administrators respond to such a situation probably varies from school to school. ~~On the one hand~~, they might make an effort to improve the school and make it more enticing for the students. On the other hand, they might respond with similar apathy and allow the situation to deteriorate. In some schools there may be vacillation, a period of experimentation followed by a lull and vice versa. And whether either reaction has any impact on the students' morale is moot. In our data, as we will show below, we find that there is a relation between educational innovation and morale: schools which have adopted more innovations generally have a higher student morale. Which variable comes first is impossible to determine.

Our measure of student morale is an index composed of the three items mentioned above: drop-out rates, transfer rates, and average daily attendance. As there are relatively high correlations among the three items, they are combined in a single index. In Table IV.21 we present the distribution of responses on each of the items, the scoring used to combine them into a single index, and the correlations among them. In Table IV.22 we present the distribution of schools along our index of morale. Only 17% of the schools in our sample have no problem at all with student commitment; in the remaining schools the students express (through one means or another) dissatisfaction with the school itself or apathy in relation to education. (Which of these two is being reflected in our data we cannot tell. It may be that the students would be no

TABLE IV.21

DISTRIBUTION OF RESPONSES, SCORING AND CORRELATIONS FOR ITEMS USED TO CREATE STUDENT MORALE INDEX

Average Daily Attendance as a percentage of stated legal enrollment is	Percent of Schools	(N)	Index Score
90% or more	48%	319	1
Less than 90%	52%	344	0
	100%	(663)	

The percentage of students in the class of 1968 that entered the first year of your school's program but transferred to another school is	Percent of Schools	(N)	Index Score
0 - 5%	40%	256	1
6% or more	60%	390	0
	100%	(646)	

The percentage of students who enrolled at some time in the class of 1968 whom you later classified as dropouts is	Percent of Schools	(N)	Index Score
0 - 5%	40%	256	1
6% or more	60%	392	0
	100%	(648)	

Correlations among items used to create index of morale	Transfers	Dropouts
Average Daily Attendance	.18	.45
Transfers	--	.36
Dropouts	--	--

more committed in another school, it may also be that the students' response is a direct reaction to the particular school they attend.)

TABLE IV.22

DISTRIBUTION OF SCHOOLS

ON MORALE INDEX

Morale		Percent of Schools	(N)
Very High	(3)	17%	(111)
Moderately High	(2)	23%	(147)
Moderately Low	(1)	29%	(185)
Very Low	(0)	31%	(196)
		100%	(639)

Student morale has a curvilinear relation to the adoption of innovation. Where morale is very high there are fewer innovations adopted than where it is moderately high (Table IV.23). This may be the result of a situation similar to that in the highest academic quality schools: where the school climate is good and operations are successful there is less impetus for change (assuming that the adoption of innovations is a response to climate). The proportion of high quality innovations adopted also has a curvilinear relation to morale. Within the classification of schools by student morale those with the highest rate of innovation adopt the highest proportion of worthwhile innovations. When the number of innovations adopted falls off, so does the discrimination with which they are adopted.

TABLE IV.23

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED

BY STUDENT MORALE

	Innovation Rate				Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
Student Morale	Low	Medium	High					
VERY HIGH	28%	47	25	(100%)	4.7	39%	44.3	(109)
MODERATELY HIGH	18%	46	36	(100%)	5.5	47%	49.2	(137)
MODERATELY LOW	29%	48	23	(100%)	4.5	32%	42.6	(171)
VERY LOW	35%	46	19	(100%)	4.1	30%	43.1	(191)

As might be expected, morale is highly related to the Racial composition of the schools: fifty-six percent of all White schools have high morale; among the other three racial types morale is considerably lower (Table IV.24). It is only among the Integrated and Black schools that the relation between student morale and the adoption of innovation persists (particularly strongly in the Black schools). Within White schools there is no relation between innovation and morale (Table IV.25). The White "elite" schools overcome or are impervious to student morale; otherwise morale is related to innovation.

TABLE IV.24

STUDENT BODY MORALE

BY RACIAL COMPOSITION

	Racial Composition			
Morale	White	White Integrated	Black Integrated	Black
Very High	27%	5%	13%	5%
Moderately High	29%	16%	13%	13%
Moderately Low	26%	32%	36%	32%
Very Low	18%	47%	38%	50%
	100%	100%	100%	100%
N =	(314)	(120)	(39)	(113)

Apparently, then, with the exception of elite schools, innovation is hampered by problems of student morale or commitment. Presumably, the cooperation of students is necessary for the successful implementation of innovations. Above we saw that in the three non-white types of schools the discrimination with which innovations were adopted was less consistent than among the White

TABLE IV.25

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES WITHIN CATEGORIES OF MORALE AND RACIAL COMPOSITION

	Racial Composition			
Morale	White	White Integrated	Black Integrated	Black
High	51% (177)	48% (25)	60% (10)	70% (20)
Low	48% (137)	24% (95)	48% (29)	38% (93)
Percent Difference	+3%	+24%	+12%	+32%

schools and that the relation between SES and innovation was contrary to our expectations. Here we see that there are strong relations within these schools between morale and innovation.

Under conditions of high morale, the relationship between innovation and the racial composition of the schools is different from that which we have observed previously. White schools no longer have the highest innovation rates and, more significantly, the White Integrated schools are no longer considerably lower on the dimension of adoption of innovation than other schools. Whatever causes the relationship between morale and the adoption of innovation, it is clearly important and worthy of further investigation.

Order and Safety

Some schools suffer disruption by constant problems of order and safety. The principals were asked in the NASSP study a question about order and safety and given a series of responses from which to choose:

Which one (or more) of the following descriptions are applicable to the situation in your school:

1) Maintaining order and safety is a major problem and requires a large investment of staff time.
2) We have no more than the average problem in maintaining order and safety.
3) We have no problem maintaining order and safety and we do not devote much staff time to it.
4) We need and use special assistance to maintain order and safety.
5) We have requested but have not received special assistance for maintaining order and safety.

In order to create a single indicator we combined the two responses which indicated an extremely severe situation necessitating additional assistance (responses 4 and 5 above) and retained the other three items separately. Thus our indicator of the severity of the problem of maintaining order and safety ranges from a low of "no problem" to a high of a severe problem (i.e., requiring special assistance). The distribution of schools along this indicator is presented in Table IV.26.

TABLE IV.26

DISTRIBUTION OF RESPONSES

ON ORDER AND SAFETY INDEX

Degree to Which Order is a Problem	Percent of Schools	(N)
No Problem	9%	58
Average Problem	63%	396
Major Problem	12%	78
Severe Problem	16%	98
	100%	(630)

The degree to which order and safety is a problem in schools is negatively related to the rate at which innovations are adopted in the schools and not at all to the quality of the innovations adopted (Table IV.27). What seems likely is that there is a reluctance on the part of administrators to introduce innovations into an already chaotic situation. There could be two reasons for this. First, in situation where there were constant problems of order and safety administrators might be loath to purchase equipment (e.g., teaching machines, television) which would have to be carefull guarded. Second, several of the innovations which do not require a purchase of equipment entail granting students considerable freedom. Administrators of schools in which the rigid control of students is a prime goal might be reluctant to enact such programs as "optional attendance," "flexible scheduling" or "independent study", programs which would make the task of supervision more difficult.

Order and safety is rarely a problem in White schools and most often a problem in the Black Integrated schools which confirms the impressions [illegible] most observers of education (Table IV.28). Among two of the four ra[illegible] of schools — White and White Integrated — order and safety is unrelated to the adoption of innovations (Table IV.29). However, among the Black Integrated and Black schools there are strong relations in opposite directions. In the Black Integrated schools there is a high rate of innovation where there is a problem of order and a much lower rate where the principals report no problem. Unless one assumes that the adoption of innovations causes the problem of order, one has to conclude that innovations are adopted in part to control students. In Black students the administrative response to order problems is to curtail the adoption of innovations, a response which may indicate an acceptance of the status quo.

TABLE IV.27

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED

BY DEGREE TO WHICH ORDER AND SAFETY IS A PROBLEM

Degree to Which Order is a Problem	Innovation Rate				Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
	Low	Medium	High					
NO PROBLEM	19%	45	36	(100%)	5.4	36%	47.0	(58)
AVERAGE PROBLEM	28%	46	26	(100%)	4.6	37%	45.0	(396)
MAJOR PROBLEM	35%	43	22	(100%)	4.2	38%	43.2	(78)
SEVERE PROBLEM	30%	50	20	(100%)	4.3	31%	41.4	(98)

TABLE IV.28

DEGREE TO WHICH ORDER AND SAFETY IS A PROBLEM BY RACIAL COMPOSITION

	Racial Composition			
Degree to Which Order is a Problem	White	White Integrated	Black Integrated	Black
No Problem or Average Problem	88%	59%	45%	52%
Major Problem or Severe Problem	12%	41%	55%	48%
	100%	100%	100%	100%
N =	(303)	(122)	(41)	(110)

TABLE IV.29

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES BY DEGREE TO WHICH ORDER AND SAFETY IS A PROBLEM

	Racial Composition			
Degree to Which Order is a Problem	White	White Integrated	Black Integrated	Black
No Problem or Average Problem	52% (266)	31% (70)	38% (13)	56% (58)
Major Problem or Severe Problem	56% (37)	28% (52)	60% (23)	41% (53)
Percent Difference	-4%	+3%	-22%	+15%

This section on student commitment introduces two more refinements on the basic racial relationship observed above. We now can see that the relationship between the adoption of innovations and the racial composition of the schools is maintinaed primarily under conditions of low parent involvement, low morale, or high disorder. Having already discussed the first of these three conditions, we turn to a consideration of the latter two. When the maintenance of order is a severe problem, the Black Integrated schools become highly innovative. One possible explanation for this is that when conditions in these schools reach a point where white students are threatened, innovation is introduced as a measure of social control. In contrast, the highly volatile all Black schools may be viewed as being impervious to reform. In neither the White nor the White Integrated schools do problems of order relate to innovation: white disorder is seen as less of a threat to social stability than is Black disorder. Also, the all White schools overcome problems of morale as well. Neither internal climate features nor parent involvement are particularly relevant here.

Although under conditions of low morale the basic relationship between racial composition and innovation is sustained, the order is almost completely different under conditions of high morale. Suddenly it is the Black schools which are the most likely to be innovative and the Black integrated schools a close second. Whereas the high disorder Black schools may be the hard core schools, the high morale Black schools may be the show case schools -- the schools where the most serious attempts at reform are occurring. In addition, the fact that under conditions of high morale the White Integrated schools are no longer considerably lower means that this is a significant variable. We will pursue it further in the next chapter when we introduce physical resources and relate these to climate features.

CHAPTER V

SCHOOL RESOURCES

Money has long been considered a crucial ingredient of the innovation process. The early studies of adaptability concluded that the amount of money available was the most important factor determining the level of innovation in a school. However, as we pointed out in our investigation of per pupil expenditures, in the more recent research there is evidence that an innovative climate can be found in a financial desert; and, moreover, that without such a climate money may flow in other, non-innovative directions.

Although we do not have any precise figure for the amount of money available for each of the individual schools at the time of the NASSP study, we do have information about other types of resources which may reflect the general financial status of the schools. We assume that schools which operate in old, inadequate facilities with a severe shortage of personnel have insufficient financial resources. The resources with which we will be concerned here may also have direct implications (i.e., independent of their being indicators of the availability of money) for what can be accomplished by way of the adoption of innovations. The physical plant and the number of staff members determine the outer limits of what type of innovation can be adopted in a school: if there literally is no space for a language laboratory, the school will not have one; if there are not enough teachers for two to double-up at any one time, there will be no team teaching.

In this chapter we will consider a series of variables which describe the resources of the school. We begin by examining a series of specific measures of physical resources: the adequacy of the plant, maintainence and overcrowding. In the second section we will examine the school staff as a resource both in terms of general adequacy ("sufficient" numbers) and specific adequacy (student-teacher ratio and the variety of specialists available).

Although our basic interest is in examining the relationship of resources to innovation, there are several additional concerns. First, we will consider in detail the relationship of resources and innovation within our categories of racial composition. It is widely assumed that schools attended by Black students or a minority of white students operate with fewer resources than all-White schools. We want to investigate this assumption. Furthermore we will look at innovation rates while controlling for physical resources in order to see whether we can better understand our findings in Chapter IV. As we will see, resources are occasionally very important, but they seem to be more important in those schools in which the innovation process is more tenuous. Although the White schools generally have the fullest resources, in some specific cases Black and Integrated schools are better equipped. Moreover, the relationships between our indicators of resources and innovation are variable and complex.

Second, we will consider the relationship of the most significant resource variable to the internal climate variables discussed above, morale and the degree to which order and safety are problems. It seems safe to assume that in many cases the physical environment has an effect on the emotional climate. It might be difficult to engender high morale in a poorly equipped, overcrowded school. Students may be more likely to be disruptive if they perceive that there is little concern for the amenities. We want to know whether, in fact, the internal climate is influenced by the physical environment and which of these factors is a more important determinant of innovation.

Finally, we want to know the extent to which the availability of resources is associated specifically with the adoption of costly innovations. Thus in addition to considering the general effect of each of the resource variables on innovation we will examine the proportion of innovations adopted which are of high cost (as defined in Chapter II). We will also look again at the proportion of high quality innovations adopted. Since there is a slight negative relationship between cost and quality, we find it conceivable that schools with a surplus of funds will adopt a high proportion of "cost" innovations and thereby sacrifice quality.

PHYSICAL RESOURCES

General Facilities

Our measure of the general adequacy of the physical facilities in the schools derives from a question asked of principals in the NASSP survey which is presented in Table V.1 along with the distribution of responses.

TABLE V.1

DISTRIBUTION OF RESPONSES ON QUESTION OF ADEQUACY OF PHYSICAL FACILITIES

Assuming reasonably efficient use, existing physical facilities in terms of educational activities for students and the local community are:	Percent of Schools	Number of Schools
Severely inadequate for an appropriate program	14%	91
Inadequate for an appropriate program	39	243
Adequate for an appropriate program	42	263
More than adequate for an appropriate program	5	35
	100%	632

The basic problem with this indicator of resources is the likelihood that in assessing the adequacy of the facilities the principals included in their consideration the degree of availability of the equipment associated with innovations included in our dependent variable (e.g., language laboratories, televisions, telephone amplification). If this is the case then, in fact, we are measuring innovation by innovation. However, although the availability of equipment is likely to be a factor in the principal's assessment, it is certain that other factors are relevant as well, particularly since the relationship between the adequacy of facilities and innovation is not an exceedingly strong one (TauC = .14). Moreover, in at least one type of school, there is no relationship between adequacy of facilities and innovation indicating that the two cannot be identical.

Considering the population of schools as a whole, both the number of innovations adopted and the proportion of innovations requiring an expenditure are greater in schools which have better facilities, as suggested by the fact that the resources are adequate. The proportion of innovations of "high quality" adopted also rises with an increase in the level of physical resources, although there is some indication that the very poor schools ("severely inadequate") are more discriminating than those immediately better off, perhaps because they have to adopt inexpensive innovations which, as noted in Chapter II, are of higher quality. And there is some evidence that the richest schools ("more than adequate") are less discriminating, again probably because of the adoption of more costly innovations (Table V.2).

There are only minor differences among the schools as defined by racial composition in the degree to which the principals report that the existing facilities are adequate (Table V.3). There are three possible interpretations of this finding: 1) there actually were no differences in the facilities among

TABLE V.2

INNOVATION RATES, QUALITY OF INNOVATIONS ADOPTED AND PROPORTION OF HIGH COST INNOVATIONS ADOPTED BY ADEQUACY OF PHYSICAL FACILITIES

Adequacy of Physical Facilities	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	(N)
Severely Inadequate	40%	4.2	(91)
Inadequate	43%	4.3	(243)
Adequate	50%	4.9	(263)
More than Adequate	58%	5.5	(35)
			(632)

Adequacy of Physical Facilities	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
Severely Inadequate	39%	45.0	(91)
Inadequate	43%	41.7	(243)
Adequate	40%	46.4	(263)
More than Adequate	35%	42.8	(35)
			(632)

Adequacy of Physical Facilities	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
Severely Inadequate	19%	44.9	(91)
Inadequate	27%	52.1	(243)
Adequate	28%	52.5	(263)
More than Adequate	33%	58.8	(35)
			(632)

TABLE V.3

ADEQUACY OF PHYSICAL FACILITIES

BY RACIAL COMPOSITION OF THE SCHOOL

Adequacy of Physical Facilities	Racial Composition			
	White	White Integrated	Black Integrated	Black
Severely Inadequate	11%	18%	23%	18%
Inadequate	40	36	29	36
Adequate	44	40	43	39
More than Adequate	5	6	5	7
	100%	100%	100%	100%
N =	(330)	(129)	(42)	(120)

White, Black and Integrated schools contrary to what was widely assumed at that time; 2) the principals used different standards to define the terms "adequate" and "appropriate program" depending on the composition of the student body; and 3) the question was too general to elicit important discriminations. In any case, there are different relations between adequacy of physical resources and innovation among the four types of schools. There is almost no difference in innovation rates among more or less adequately equipped White schools but great differences among Integrated schools and some, slighter, differences in the Black schools (Table V.4). In White schools there is a relatively high rate of innovation no matter what the level of other resources. White schools committed to innovation can carry through on this even when funds are low. However, among the Black Integrated schools and, to some extent among the Black

TABLE V.4

INNOVATION RATES AND MEAN INNOVATION SCORES

BY ADEQUACY OF PHYSICAL FACILITIES AND RACIAL COMPOSITION

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

Racial Composition of Schools	Adequacy of Physical Facilities: Inadequate	Adequate	Percent Difference
WHITE	49% (164)	53% (159)	+ 4%
WHITE INTEGRATED	18% (67)	46% (55)	+28%
BLACK INTEGRATED	38% (21)	65% (20)	+27%
BLACK	37% (67)	54% (54)	+17%

MEAN INNOVATION SCORES

Racial Composition of Schools	Adequacy of Physical Facilities: Inadequate	Adequate	Difference
WHITE	4.7 (164)	5.1 (159)	+ .4
WHITE INTEGRATED	3.3 (67)	4.5 (55)	+1.2
BLACK INTEGRATED	3.9 (21)	6.0 (20)	+2.1
BLACK	4.0 (67)	4.9 (54)	+ .9

schools, innovation is dependent on adequate resources. Thus among these schools we find greater extremes; i.e., schools with poor resources and low innovation rates versus schools with good resources and high innovation rates. The fact that even when there are adequate conditions the level of innovation in the White Integrated schools, although somewhat improved, is still lower than in the remaining three types of schools indicates that a lack of resources cannot explain the persistence of lower rates in these schools.

This pattern of the relationship of an independent variable to innovation is reminiscent of the relationships of the internal climate variables to innovation rates in the four different types of schools. The White schools seem to be as impervious to resource problems as they are to internal climate problems. Not surprisingly, we find that our basic indicator of resources is positively related to each of these internal climate conditions although the relationships are not strong ones. Looking first at Morale, we find a weak relationship to the adequacy of the physical facilities (Tau B = .12) but in a crosstabulation a clear indication that the effects are cumulative, that schools which suffer both types of problems -- low morale and low resources -- have lower rates of innovation than schools which have at least one positive condition and far lower than the schools with both advantages (Table V.5). Innovation is most likely if the resources are adequate and morale is high and although in a fair proportion of these schools the presence of either money or morale is sufficient to insure a relatively high level of innovation, there are few schools which can function well without either of them.

When we examine these two variables cojointly for each of the four types of schools for which we have a sufficient number of cases, we find that among the White schools, which are able to overcome either of these factors alone,

TABLE V.5

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES AND STUDENT MORALE

	Adequacy of Physical Facilities	
Morale	Inadequate	Adequate
LOW	32% (195)	47% (163)
HIGH	48% (123)	59% (122)

the joint effects are minimal. Among the White Integrated schools each of the factors alone is important. Cumulativ[illegible] they are of major significance, although among the two money seems to be more important than morale. Innovation is rare in these schools and particularly so in the large proportion of them which have few assets. Although we cannot carry this analysis through completely among either the Black or the Black Integrated schools (there are few of them with high morale and almost none with both high morale and adequate physical facilities -- a fact important in itself), there is some evidence that among Black schools as well as integrated schools the cumulative impact of the two conditions is significant (Table V.6).

The relationship between the degree to which order and safety is a problem, adequacy of physical facilities and innovation rates are similar to those observed above using morale as the third variable. Although order and safety is only slightly more likely to be a problem in the poorer schools (Tau B = .14), the joint impact of the two factors is significant (Table V.7). Schools

TABLE V.6

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES, STUDENT MORALE AND RACIAL COMPOSITION

	Physical Facilities			
	Inadequate		Adequate	
	Morale			
Racial Composition	Low	High	Low	High
WHITE	45% (72)	60% (80)	51% (64)	54% (80)
WHITE INTEGRATED	13% (51)	20% (14)	30% (42)	72% (11)
BLACK INTEGRATED	37% (16)	* (3)	61% (13)	* (7)
BLACK	32% (50)	63% (11)	45% (42)	* (9)

*There are too few cases on which to base a percentage.

TABLE V.7

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES AND DEGREE TO WHICH ORDER IS A PROBLEM

	Adequacy of Physical Facilities	
Degree to Which Order is a Problem	Inadequate	Adequate
MAJOR	31% (107)	55% (68)
MINOR	43% (223)	52% (227)

with major problems with order as well as inadequate facilities have extremely low innovation rates, but the problem of order is more easily overcome than the problem of poor facilities. Again, when we look at the interaction of the two variables on innovation within each of the four types of schools as defined by race interesting patterns emerge (Table V.8). In the White schools, which are generally unaffected by either condition alone, there are only small differences in innovation rates among the four types of schools, although there is a slightly higher rate when the physical facilities are inadequate and order is a problem than when there is only one problem, perhaps because of pressures to upgrade these schools, to keep them at the level of their counterparts. Among the integrated schools there is almost no innovation when the conditions are poor and an indication again that, in fact, resources are more important than internal climate factors in determining innovation rates. Unfortunately we cannot pursue this issue with the Black Integrated schools although with the data at hand it is significant to note that we find no evidence to counter our assumption that when order is threatening to whites innovations are installed. Among the Black schools we again see a group of hard-core schools which seem to be abandoned by the central office. If Black schools have something going for them -- either order or resources -- innovation rates are high, but if there are major problems little or nothing is done.

Overall, then, we can see that although the physical resources have only minimal effects on the internal climate, the joint effects of the two are important in those schools in which there are problems with innovation to begin with: the White Integrated, Black Integrated and Black schools.

TABLE V.8

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES, ORDER AND RACIAL COMPOSITION

	Physical Facilities			
	Inadequate		Adequate	
	Order			
Racial Composition	Major	Minor	Major	Minor
WHITE	57% (26)	45% (139)	46% (15)	54% (142)
WHITE INTEGRATED	12% (31)	22% (36)	50% (22)	42% (33)
BLACK INTEGRATED	42% (14)	* (7)	* (9)	45% (11)
BLACK	22% (36)	52% (29)	54% (22)	54% (31)

*There are too few cases on which to base a percentage.

School Maintenance

In the NASSP survey the principals were asked about the adequacy of physical maintenance in the question presented in Table V.9. Whether or not the school building and grounds are adequately maintained may be another indicator of the resources available to the school in which case we would assume it to be positively related to innovation. Also, within a poorly maintained building it might be more difficult to consider making changes (i.e., adopting innovations) which would seem superficial in light of the general drabness and inadequacy of the environment. On the other hand, maintenance costs can absorb high resources and thereby militate against innovation. At first glance both of these seem to be the case (Table V.10). Schools with "adequate" maintenance have slightly higher innovation rates and also spend more money on innovation (i.e., adopt a higher proportion of "cost" innovations) than schools in which the maintenance is inadequate and schools in which the maintenance is considered to be "commendable" have slightly lower innovation rates, perhaps because the high maintenance costs absorb the resources.

TABLE V.9

DISTRIBUTION OF RESPONSES ON QUESTION OF ADEQUACY OF MAINTENANCE

General Maintenance of the School Building and Grounds is:	Percent of Schools	Number of Schools
Inadequate	27%	173
Adequate	49	323
Commendable	24	160
	100%	(656)

However, the level of school maintenance is highly related to our general indicator of the adequacy of physical resources (r = .26), and when we examine innovation rates while controlling for general resources we find that maintenance is independently relevant in only one situation: schools which have generally inadequate facilities but devote a considerable amount of time and energy to maintenance -- which is probably more important in older facilities -- have very low innovation rates. Schools in old buildings can either devote the money to maintaining these buildings or to introducing innovations; they can rarely accomplish both at the same time (Table V.11).

TABLE V.10

INNOVATION RATES, QUALITY OF INNOVATIONS ADOPTED AND PROPORTION OF HIGH COST INNOVATIONS ADOPTED BY ADEQUACY OF MAINTENANCE

Maintenance	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	(N)
Inadequate	44%	4.4	(167)
Adequate	47%	4.7	(315)
Commendable	44%	4.6	(147)
			(629)

Maintenance	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
Inadequate	33%	44.5	(167)
Adequate	36%	43.2	(315)
Commendable	40%	46.3	(147)
			(629)

Maintenance	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
Inadequate	22%	50.3	(167)
Adequate	29%	54.4	(315)
Commendable	23%	47.6	(147)
			(629)

TABLE V.11

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES AND ADEQUACY OF MAINTENANCE

	Physical Facilities	
Maintenance	Inadequate	Adequate
Inadequate	41% (121)	53% (45)
Adequate	42% (56)	53% (150)
Commendable	28% (53)	52% (94)

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Overcrowding

In 1969 overcrowding was a very common problem in urban high schools. As we can see in Table V.12, only 26% of the schools in our sample reported an enrollment that was no greater than the stated capacity whereas the remainder had one hundred students or more in excess of capacity. Since school budgets are to a great extent determined by the number of students attending the schools, it could be that the overcrowded schools, although not richest on a per pupil basis, have more money to play around with and therefore might adopt a great number of innovations and a high proportion of innovations that involve cost. On the other hand, overcrowding might make more difficult the establishment of high morale and entail more extreme problems of order and safety, thereby inhibiting the adoption of innovations.

TABLE V.12

DISTRIBUTION OF RESPONSES TO QUESTION OF OVERCROWDING

What is the relation between stated capacity of physical facilities for a single school session and the current enrollment?	Percent of Schools	Number of Schools
Enrollment is less than stated capacity	26%	174
Enrollment exceeds capacity by fewer than 100 students	22	147
Enrollment exceeds capacity by 101-500 students	33	212
Enrollment exceeds capacity by 501-1000 students	10	68
Enrollment exceeds capacity by more than 1001 students	8	52
	100%	(653)

In fact, we find that overcrowding has a relation to the number of innovations adopted only at the extreme end (Table V.13). Schools which are exceedingly overcrowded adopt considerably fewer innovations than those which are only moderately or not at all overcrowded. Overcrowding is also negatively related to the percentage of high cost innovations, perhaps because in schools with a lot of students more money must be devoted to administrative concerns. And overcrowding, if it entails more serious problems of order, would perhaps inhibit the adoption of innovations, the protection of which would be a matter of concern: i.e., you don't want to spend money on televisions or telephones where vandalism is a possibility or probability.

TABLE V.13

INNOVATION RATES AND PROPORTION

OF HIGH COST INNOVATIONS ADOPTED BY OVERCROWDING

Overcrowding	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
Enrollment is less than stated capacity	46%	4.7	36%	58.7	(166)
Enrollment exceeds capacity by fewer than 100 students	44%	4.7	39%	54.5	(142)
Enrollment exceeds capacity by 101-500 students	51%	4.7	17%	45.9	(202)
Enrollment exceeds capacity by more than 500 students	39%	4.2	22%	49.1	(115)

Not surprisingly there is a very strong relationship between overcrowding and the adequacy of physical facilities, indicating that the number of students enrolled must have been a factor in the principal's judgment (r = .29). And when we examine overcrowding while controlling for the general level of adequacy we find that overcrowding alone is significant only when resources are low (Table V.14). The richer schools can handle this type of problem and continue to innovate; the poorer schools cannot.[1]

TABLE V.14

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES AND OVERCROWDING

	Overcrowding	
Adequacy of Physical Facilities	Minimal (100 or less in excess)	Major (101 or more in excess)
Inadequate	32% (126)	42% (205)
Adequate	53% (180)	52% (110)

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[1] Interestingly enough, overcrowding has a negative relationship to the percent of the student body that is Black, i.e., it is most frequently a problem in White schools. Among neither White nor White Integrated schools does it have any relation to the number of innovations adopted. Among the Black Integrated schools we find considerably higher rates of adoption where there is only minor overcrowding. On the other hand, we find considerably lower rates of innovation among Black schools which have no overcrowding problem. Among Black Integrated schools innovation seems to be placed in prime conditions: among Black schools innovation may be more of a compensatory gesture, a substitute for improving more basic conditions. (All tables to support this analysis may be found in Appendix H.)

The obvious solution to severe overcrowding in schools is to go onto a double session day. Forty-four percent of schools with more than one hundred students in excess of the stated capacity are on double sessions as opposed to fifteen percent of the schools with a less severe problem. Whether or not a school is on a double session is not related to the number of innovations adopted.[1] This means that the more complex administrative structure entailed in a double session does not have an inhibiting effect on the adoption of innovations. We will refer to this issue again in the next chapter when we examine school complexity.

STAFF RESOURCES

General Adequacy of Staff Size

Basically, whether or not there are adequate numbers of staff "to provide the current student body educational experiences appropriate to the implementation of the school curriculum"[2] is not relevant to the adoption of innovations. Schools with inadequate staff resources are slightly less likely to adopt innovations than schools with a sufficient number of staff members but the differences are not significant. Either innovation in schools is not dependent on there being a large staff to carry out and implement the innovation, or the principals' judgments of this question were determined by factors which make it an inadequate assessment of actual conditions in the schools. Therefore in considering the impact of the staff as a resource on the adoption of innovations we have to look at more objective indicators.

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[1] Tables are presented in Appendix H.

[2] Phrasing of question of adequacy of staff in NASSP questionnaire (B-33).

Student-Teacher Ratio

The student-teacher ratio in the school seems to be a more relevant variable with respect to innovation than the general question above.[1] (Question and distribution of responses shown in Table V.15.) Basically, the schools with the better student-teacher ratios have higher rates of innovation than schools in which there are relatively fewer teachers; presumably because it is easier to implement innovations when there is a larger staff, allowing for flexibility in arrangements -- e.g., team teaching. Both the proportion of high cost innovations adopted and the proportion of high quality innovations adopted have curvilinear relationships to the variable of student-teacher ratio (Table V.16). Schools with very low and very high student-teacher ratios adopt fewer innovations which cost money and are less discriminating in their adoption. This is a reversal of the usual relationship between the proportion of high cost innovations adopted and the proportion of high quality innovations adopted. The fact that the schools with exceedingly "good" student-teacher ratios adopt a smaller proportion of high cost innovations is easily understood -- they devote a large proportion of the budget to maintaining a large staff. Similarly, we can account for both the lower rate in the number of innovations adopted and the lower proportion of innovations involving cost in the schools with exceedingly poor student ratios -- these are the schools with few resources altogether. But such conditions generally lead to a higher proportion of quality innovations adopted. Why they don't here is a mystery to us.

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[1] Student-teacher ratio is unrelated to our general indicator of the adequacy of physical resources. The next variable we examine -- the variety of specialists on the school staff -- is also unrelated to physical resources. Physical and staff resources represent different components of the wealth of a school and need not be related.

TABLE V.15

DISTRIBUTION OF RESPONSES

ON QUESTION OF STUDENT-TEACHER RATIO

Teacher-Student Ratio	Percent of Schools	Number of Schools
1:20 or less	15%	97
1:21 - 1:25	43	288
1:26 - 1:30	33	217
1:31 or more	9	59
	100%	(661)

White schools are somewhat less likely to have good student-teacher ratios than are the other three types of schools, perhaps because there are less intense problems of maintaining order in these schools and they can get by with a smaller staff (Table V.17). Also, there has been less public awareness of this problem in White schools, which may explain why they are more likely to be overcrowded as well. And among the White schools (and White Integrated schools) this factor is unrelated to innovation (Table V.18). Thus White schools are able to overcome this lack of resource as well as a lack of adequate physical facilities. Although Janowitz has argued that the emphasis on decreasing the student-teacher ratio in Black schools has resulted in an expense inhibiting to the adoption of innovations, we do not find this to be the case.[1] In Black and Black Integrated schools there is more innovation where there are better student-teacher ratios. As with the other indicators

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[1] Janowitz, op. cit., p. 17.

TABLE V.16

INNOVATION RATES, QUALITY OF INNOVATIONS ADOPTED AND PROPORTION OF HIGH COST INNOVATIONS ADOPTED BY STUDENT-TEACHER RATIO

Teacher-Student Ratio	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	(N)
1:20	52%	4.8	(90)
1:21 - 1:25	47%	4.7	(277)
1:26 - 1:30	46%	4.6	(209)
1:31 or more	42%	4.4	(54)

Teacher-Student Ratio	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
1:20	31%	41.6	(90)
1:21 - 1:25	39%	45.2	(277)
1:26 - 1:30	39%	45.1	(209)
1:31 or more	30%	40.9	(54)

Teacher-Student Ratio	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
1:20	23%	47.8	(90)
1:21 - 1:25	30%	54.8	(277)
1:26 - 1:30	28%	51.7	(209)
1:31 or more	22%	43.6	(54)

TABLE V.17

PERCENT OF SCHOOLS WITH HIGH TEACHER-STUDENT RATIO (1:25 OR FEWER) BY RACIAL COMPOSITION

Racial Composition	Percent with Teacher-Student Ratio of 1:25 or Fewer	(N)
WHITE	54%	(322)
WHITE INTEGRATED	64%	(122)
BLACK INTEGRATED	65%	(40)
BLACK	68%	(122)

TABLE V.18

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER-STUDENT RATIO AND RACIAL COMPOSITION

	Teacher-Student Ratio		
Racial Composition	1:25 or Fewer	1:26 or More	Percent Difference
WHITE	52% (165)	49% (148)	+ 3
WHITE INTEGRATED	31% (76)	27% (44)	+ 4
BLACK INTEGRATED	57% (26)	42% (14)	+15
BLACK	53% (77)	27% (36)	+26

of resources and the indicators of general internal climate, the better the conditions the more likely the innovation rates in these schools will be high.

Student Services

School principals were asked in the NASSP survey about the inclusion on the staff of six types of specialists: nurse, psychologist, speech therapist, audiometrist, home counselor or social worker, and psychiatrist. In order to create an index of the adequacy of this type of resource we gave each school a single score based on the number of different specialists included in the staff. The distribution of schools along this variable is presented in Table V.19. Somewhat less than half of the schools have only one (or no) specialists available and in 73% of the cases this is a nurse, indicating that intensive psychological assistance is not readily forthcoming in many urban schools.

TABLE V.19

DISTRIBUTION OF SCHOOLS

BY NUMBER OF TYPES OF SPECIALISTS

Number of Specialists	Percent of Schools	Number of Schools
NONE	17%	99
ONE	32%	187
TWO	26%	158
THREE	14%	84
FOUR OR MORE	11%	64
	100%	(600)

There is basically no difference in innovation rates among the schools classified by the number of specialists except for those which have a very high number of specialists (three or more) (Table V.20). These schools have high rates of innovation. They are well-cared for and can institute a wide variety of programs. There is a more general negative relationship between the number of specialists on the staff and the proportion of innovations adopted which are of high cost. If money is allocated to hire a psychologist it cannot be used for the purchase of televisions. Among the four types of school defined by race, there are variations in the number of types of specialists available. White, Black Integrated and Black schools are generally better staffed in this respect than are the White Integrated schools: the proportion of schools with two or more types of specialists are: White -- 58%; Black Integrated -- 59%, Black -- 52%; and White Integrated -- 40%. As was true of general resources (to which the number of staff specialists is unrelated), it is most likely that among the integrated schools the resource variable and innovation rates are highly related (Table V.21). These schools have all or nothing: in this case both specialists and innovations or neither, whereas among many White and Black schools the two are unrelated.

There were several issues in this chapter. The first was whether or not the general level of the resources of a school was related to the number of innovations adopted in the school. On the whole we found slight positive relationships; schools with more complete facilities and staff resources are more likely to be able to innovate at a high rate and adopt a higher proportion of costly innovations (thereby occasionally letting quality slip). This means that the resources may be important. But then we saw that the major resource

TABLE V.20

INNOVATION RATES AND PROPORTION OF HIGH COST INNOVATIONS ADOPTED BY NUMBER OF SPECIALISTS

Number of Specialists	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
NONE	44%	4.4	32%	56.6	(95)
ONE	38%	4.3	29%	54.7	(176)
TWO	44%	4.6	21%	46.5	(151)
THREE OR MORE	58%	5.2	23%	47.9	(148)

TABLE V.21

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) WITHIN NUMBER OF SPECIALISTS AND RACIAL COMPOSITION

	Number of Specialists		
Racial Composition	Low (0,1)	High (2 or more)	Difference
WHITE	51% (125)	50% (168)	- 1
WHITE INTEGRATED	18% (66)	43% (44)	+25
BLACK INTEGRATED	31% (16)	65% (23)	+34
BLACK	45% (5[illegible])	46% (56)	+ 1

variables -- general adequacy of physical resources, student-teacher ratio and number of specialists -- were strongly related to innovation only in the White Integrated, Black Integrated and Black schools. Generally inadequate resources in White schools never inhibits the adoption of innovations. From this finding we draw two conclusions. First, with respect to innovation, resources are not crucial. Innovations can be implemented in old, poorly maintained, and/or understaffed schools although only certain types of schools -- i.e., the White schools -- can overcome these disabilities. Therefore we continue to argue that the determinants of innovation are different in White schools than they are in the other three types of schools. Increasingly it seems that if the efforts to upgrade the education in the Black Integrated and Black schools encountered "obstacles" such as poor resources or low morale, the effort slackened. And in White Integrated schools where there never was much of an effort in the first place, innovative impulses were devastated by similar obstacles. Moreover, with respect to the White Integrated schools we have a clear indication that the lack of innovation has deeper roots than physical resources or internal climate. At the same level of resources as the other three types of schools (or climate) the White Integrated schools consistently have the lowest innovation rates.

Surprisingly, internal climate factors are only minimally related to physical resources. Both high morale and a high degree of order and safety can be maintained in schools which lack "necessary" amenities. When the "emotional" situation deteriorates changes must be made. But these changes need not be costly renovations of existing facilities, which alone do not ensure a better climate. At the same time, schools in which either physical resources or climate factors are related to innovation (all except the White schools) are strongly affected by the combination of the two.

CHAPTER VI

SCHOOL ORGANIZATION

In this chapter we ask whether the structure of a school as a complex organization has any impact on either the number or type of innovations adopted in the school. As was pointed out by Rogers and Shoemaker[1] in their review of studies covering the adoption of innovations in 1974 and again by Baldridge in 1974[2], the study of innovation in school systems has generally underplayed any form of organizational analysis. For instance, the studies included in the Ross compendium have no section on organizational variables at the individual school level[3] and those selections in the readings edited by Miles which consider organizational variables are generally theoretical pieces and offer no data supporting the hypotheses.[4]

This omission of organizational variables in the analysis of the adoption of innovations in schools means that neither the dissemination of innovations (e.g., from research organizations) nor the selection of innovations for adoption by school administrators proceeds with valid guidelines. If the implementation of a particular innovation is unsuccessful at any stage in the process there should be some way of determining whether the problem lies in the characteristics of the adopting organization, in the nature of the innovation itself, or in some combination of the two. Without any clues as to which organizational variables were relevant, it would be hard to determine what was going on in any specific case. Furthermore, an analysis of the relationship between the organizational features of schools and the rate at which they adopt innovations can help broaden the developing theories in other spheres of organizational analysis by introducing a new type of organization. This would allow specification of the conditions under which any one organizational variable becomes relevant.

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[1] Everett M. Rogers and F.F. Shoemaker, Communication of Innovations (New York: The Free Press of Glencoe, 1971).

[2] Victor Baldridge, op. cit.,

[3] Donald H. Ross, op. cit.

[4] Matthew Miles (ed.), op. cit.

For the reasons stated above, our selection of variables to include in an analysis of the structure of the schools attempts to follow the lines of research set out by those concerned with other types of organizations. At the same time, we include variables which are uniquely important in schools. Basically, in the first sections of this analysis we focus on two structural features which have been found in past research to be related to the rate of adoption of innovations in a wide variety of types of organizations: size and organizational complexity. The variable of complexity will be broken down into two components: complexity of task structure and internal differentiation. In the third section we will look at the organization structure in terms of the relative size of the administrative staff vis-a-vis the teaching staff, and the distribution of power and authority. The distinction between the issues in the middle section and those at the end is, in part, a distinction between the horizontal and the vertical dimensions of an organization. The fact that various aspects of the two dimensions are frequently related does not mean that each cannot be approached separately.

SCHOOL SIZE

What size school is best for educating students? This is a question that has plagued educators for years, in part because it is so highly related to other issues such as whether or not to combine students with highly varied interests and abilities into single schools and how best to utilize scarce resources. Our concern with school size is whether it is a feature which affects the number or type of innovation implemented in a school.

In Chapter II we reviewed some of the literature on the relation of organizational size to the adoption of innovations which suggested that large organizations adopted new ideas and new techniques at a faster rate than smaller organizations. We did not find a confirmation of these findings in our analysis of school systems. Nor did Heydebrand and Noell in their work on professional organizations support the earlier hypotheses. They concluded that size had no effect on innovativeness when other relevant variables were controlled, although they did report a slight curvilinear relationship between the two variables indicating that R&D projects occured more frequently in middle-size agencies than in very small or very large ones.[1]

We can now examine size as a characteristic of the schools and see whether at this level it has any impact on the adoption of innovations. There is very little research dealing directly with the effects of school size -- as opposed to district size -- on the adoption of innovations.[2] Anderson found that teacher resistance to innovation increased significantly in large schools

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[1] Wolf V. Heydebrand and James J. Noell, "Task Structure and Innovation in Professional Organizations" in Heydebrand (ed.), Comparative Organizations (New Jersey: Prentice-Hall, 1973), p. 318.

[2] For some of the more recent research on the relation of school district size to innovation, see: Ronald Havelock (1973), op. cit.; and V. Baldridge and G. Burnham, op. cit.

-- presumably because of problems of increasing depersonalization -- but he did not relate this to the general level of innovativeness within the schools.[1] It is possible that there was more resistance to innovation but also more innovation taking place. And the most complete study of differences between large and small schools -- by Barker and Gump -- did not investigate the question of innovations.[2]

There are two reasons why we consider size important and potentially relevant to the issue of innovation. First, the sheer size of an organization may be related to its complexity (an issue we will consider below) and, like complexity, may be related positively to the number and intensity of the demands on the system. It seems reasonable to assume that a large staff and student body create greater coordination and allocation problems than would exist in a smaller school. For instance, it requires a large secretarial staff, considerable expense, and perhaps complex machinery to work out student schedules in a large school. Such investments of time and energy could have the effect of making large schools resistant -- if not to all innovations -- at least to those which would increase the work needed for these tasks.

Second, school size is highly related to the amount of money available. In most school systems individual school budgets are largely determined by the number of students attending the school. Thus large schools have a larger total budget which may provide them with more flexibility in the determination of allocation for specific items. At the same time, administrators in large schools may find it easier to justify requests for new equipment on the grounds that it will benefit a greater number of students, i.e., economics of scale. Thus from the point of view of resources -- as opposed to administrative flexibility -- we might expect a higher rate of innovation in large schools.

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[1] James G. Anderson, Bureaucracy in Education (Baltimore: John Hopkins Press, 1968), p. 146.

[2] Roger G. Barker and Paul V. Gump, Big School, Small School (Stanford, California: Stanford University Press, 1964).

Our measure of school size is based on a question in the NASSP survey which asked for the number of students in the school. The total distribution of schools is shown in Table VI.1.

TABLE VI.1

DISTRIBUTION OF SCHOOLS

BY NUMBER OF STUDENTS ENROLLED

Number of Students Enrolled	Percent of Schools	Number of Schools
Fewer than 1000	10%	69
1000 - 1499	22	143
1500 - 1999	20	135
2000 - 2499	20	132
2500 - 2999	13	78
Over 3000	15	103
	100%	(660)

Before proceeding with our analysis, we want to place these numbers in the context of the country as a whole. Large city schools differ from other schools in a variety of ways but perhaps the most striking of these is size. In Table VI.2 we show comparative figures for all U.S. high schools and for large city schools alone. As we can clearly see, in this study we are looking

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at schools which are far larger than those attended by most high school students in this country. Therefore, when we talk about school size and its relation to the adoption of innovation, it must be understood that our findings may only reflect one end of the scale and that in schools with student populations below one thousand there may be a very different relationship between size and the adoption of innovations.

TABLE VI.2

ENROLLMENT OF ALL U.S. SECONDARY SCHOOLS

COMPARED WITH THE LARGE-CITY HIGH SCHOOLS

Number of Students Enrolled	All U.S. Schools*	Large City Schools (1969)
Less than 1000	88%	11%
1000 to 2,499	11	62
2500 and above	1	27
	100%	100%
	N = (24,226)	N = (670)

*All figures for U.S. schools are adapted from U.S. Dept. of Health, Education and Welfare, U.S. Office of Education, "Statistics of Education in the United States," 1958-59 series, Number 1, "Public Secondary Schools." These statistics include junior high schools.

As we can see in Table VI.3, school size in terms of the number of students enrolled, is not related to the number of innovations adopted in the school.[1] This means, on the one hand, that a large staff and student body do

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[1] Student enrollment size is highly related to staff size (r = .97). Therefore we use this one measure alone rather than investigating staff size separately.

TABLE VI.3

INNOVATION RATES, QUALITY OF INNOVATIONS ADOPTED AND PROPORTION OF HIGH COST INNOVATIONS ADOPTED BY SCHOOL SIZE

SIZE	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	(N)
SMALL (1000-1499)	42%	4.6	(201)
MEDIUM (1500-2499)	49%	4.7	(254)
LARGE (2500 or more)	44%	4.5	(174)

SIZE	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
SMALL (1000-1499)	35%	42.0	(201)
MEDIUM (1500-2499)	37%	45.5	(254)
LARGE (2500 or more)	35%	45.2	(174)

SIZE	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
SMALL (1000-1499)	30%	54.0	(201)
MEDIUM (1500- 2499)	24%	52.3	(254)
LARGE (2500 or more)	21%	47.8	(174)

not create situation inhibiting to the adoption of innovations and, on the other hand, that smaller schools do not have any special trouble in accumulating the resources necessary for at least some innovation. Indeed, we find in Table VI.3 that the proportion of "high cost" innovations adopted decreases slightly with school size. The larger schools are less likely to adopt this type of innovation perhaps because to do so in such a setting would involve considerably more expense than where there are fewer students and perhaps because actually they do not have more resources than the small schools.[1] The quality of the innovations adopted is also unrelated to size. Factors other than that of the number of students enrolled determine the selectivity with which innovations are adopted.

There are only minor variations in the size of schools serving different racial groups: Black schools are least likely to be large; White schools are least likely to be small (Table VI.4). Within the types of schools defined by race, however, there are different relationships between size and innovation (Table VI.5). Although innovation in neither White nor Black schools is significantly affected by size, it is in both types of integrated schools and in opposite directions. White Integrated schools are most likely to have high innovation rates when there are large numbers of students enrolled, perhaps because it is only under this condition that they receive the necessary central office attention. Black Integrated schools are more likely to be innovative when they are small. It could be that the basic problem of morale is overcome more easily when there are fewer students involved and that therefore innovation can more readily take place. In any case it seems clear that the school size is not significant in itself and only achieves importance when associated with other factors.

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[1] There is no relation between size of student enrollment and the general adequacy of the physical resources.

TABLE VI.4

SCHOOL SIZE BY RACIAL COMPOSITION

	SIZE			
Racial Composition of Schools	SMALL (1000-1499)	MEDIUM (1500-2499)	LARGE (2500 or more)	(N)
WHITE	26%	42%	30%	(323)
WHITE INTEGRATED	37%	29%	34%	(124)
BLACK INTEGRATED	43%	26%	29%	(41)
BLACK	35%	51%	12%	(117)

COMPLEXITY

In the recent literature on the adoption of innovations in organizations, complexity is considered to be a primary characteristic of organizations affecting the innovation process. When defined as "the number of occupational specialties in the organization and their professionalism" complexity has been found to be positively related to the rate of program change because "the diversity in occupational backgrounds can . . . bring a variety of sources of information to bear, which can facilitate awareness or knowledge of innovations. . . ."[1] However, if complexity is positively related to innovation at the initiation stage, there is some evidence that at the implementation stage, organizational complexity has negative effects. It is argued that "high diversity (complexity) makes it difficult for any one source of authority to

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[1] Gerald Zaltmen, et al., Innovation and Organizations (New York: John Wiley and Sons, 1973), p. 135.

TABLE VI.5

INNOVATION RATES AND MEAN INNOVATION SCORES WITHIN SCHOOL SIZE AND RACIAL COMPOSITION CATEGORIES

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

Racial Composition of Schools	SIZE SMALL (1000-1499)	 MEDIUM (1500-2499)	 LARGE (2500 or more)
WHITE	46% (87)	55% (138)	47% (98)
WHITE INTEGRATED	24% (46)	31% (35)	35% (43)
BLACK INTEGRATED	67% (12)	40% (11)	33% (12)
BLACK	45% (42)	45% (60)	47% (15)

MEAN INNOVATION SCORES

Racial Composition of Schools	SIZE SMALL (1000-1499)	 MEDIUM (1500-2499)	 LARGE (2500 or more)
WHITE	4.9 (87)	5.0 (138)	4.7 (98)
WHITE INTEGRATED	3.3 (46)	4.0 (35)	4.2 (43)
BLACK INTEGRATED	6.0 (13)	4.0 (11)	4.0 (12)
BLACK	4.5 (42)	4.5 (60)	4.5 (15)

force some consensus toward agreement as to which of the many proposals should be implemented."[1] Thus the proportion of initiated innovations actually reaching the stage of implementation may be lower in highly complex organizations because of the greater number of innovative proposals generated in a more complex organization.[2]

Speculation on the adoption of innovations in schools (as opposed to other organizations) reaches different conclusions. Taking as his starting point the system problems requiring solution -- social control, sequential organization of program, goal attainment, public accountability and staff allocation -- Wayland argues that a complex division of labor (the measure of complexity he uses) will mean an increase in the system demands and make less probable the adoption of innovation.[3]

We propose to use a more refined concept of complexity which allows us to examine the complexity of the school's task structure as defined by the type of students enrolled in the school as well as the complexity of the school's internal differentiation. Our measurements will allow us to maintain the distinction between complexity and the characteristics of the school staff. Thus, rather than using a single measure of complexity we will look at various structural characteristics of schools which we feel are components of complexity and we will ask whether these characteristics (either alone or in combination with the others) are related to the number or type of innovations adopted in the schools.

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[1] Ibid.

[2] Ibid., p. 136.

[3] Wayland, op. cit.

We begin with the complexity of the school's task structure which is defined in two ways: 1) by the variety of types of students admitted to the school in terms of their academic ability; and 2) by the number of different age groups within the school. Internal differentiation is measured by the variety of instructional programs offered in the schools. Above we mentioned the variety of specialists on the staff in our discussion of resources. We will refer to it again in this chapter as we discuss internal differentiation. We begin with the complexity of task structure since it is the broader variable and is, as we will see below, highly related to at least one aspect of internal differentiation.

Task Complexity

Our first concern is with the scope of the task assumed by the schools in terms of the types of students enrolled. It seems logical to reason that schools which enroll a broad variety of students -- either by academic ambition or by age -- are committing themselves to more than a single educational task or function. We want to know whether complexity of task structure in schools is related to the number of innovations adopted.[1]

We look first at the variety of types of students in a school and then turn to the number of different age groups. For the first issue, school "function," our variable is basically a dichotomous one, whether the school is a special school (either academic or vocational) with enrollment limited to a single type of student or whether the school is a comprehensive school committed to providing an education for all students within a circumscribed area. For the question of number of age groups we will compare two or three, four, and five or six year high schools.

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[1] For a somewhat different use of the concept of task structure, cf. Heydebrand and Noell, op. cit., p. 306.

Type of School. Comprehensive or Special

Following the lines set forth by Conant in his report, The American High School Today, we divide the high schools in our study into two general categories, multi-function or comprehensive schools and single function or specialized schools.[1] The former group we consider to be more complex by our definition because they take on a greater number of tasks. A specialized academic high school is committed to providing an educational experience which will enable its graduates to face other college-bound students on a competitive basis. Similarly, a vocational school may have as a goal to teach the basic skills and vocational skills which will allow its graduates to enter the labor market with a competitive advantage. Neither of these two types of schools need involve itself in any way with the task of the other. Nor need they concern themselves with a continuous sorting or tracking process.[2] To a great extent this has been taken care of before students are enrolled. These schools can channel their energies into teaching a limited range of subject matters. Comprehensive schools, on the other hand, have a commitment to educate all students who live in a particular enrollment area. This will usually include both of the types of students described above (i.e., those who are college-bound and those who are not) as well as a broad middle group of students whose futures are less clear. Thus they also, to some extent, commit themselves to making sure that each student selects an appropriate program given his/her particular abilities, needs and interests.

Naturally, not all comprehensive schools provide adequate educational experiences for the entire range of students who may be enrolled, nor do they necessarily perform their sorting functions well. However, the adequacy of the education provided in any of these three types of schools is not our concern at this point. Nor are we interested in the degree of "comprehensiveness" here. Rather we are interested in seeing whether a broader task -- as defined by the enrollment policy of the school -- is related to the adoption of innovations.

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[1] James B. Conant, The American High School Today (New York: McGraw-Hill, 1959).

[2] Of course, there may be some "tracking" within these schools as well.

We want to clarify several points before we proceed with this analysis. First, although our variable of task complexity is closely related to the variable we will examine below of internal differentiation -- comprehensive schools are more likely to have a varied program because they have to offer a wider range of types of courses -- we think it useful to start with the broader characteristic first and then examine the effects of differentiation (degree of comprehensiveness) within the different types of schools. Because of the small number of specialized schools (see below) we will be able to carry out this analysis intensively only among the comprehensive schools.

Second, type of school will naturally overlap with type of student as identified in Chapter IV. Vocational schools will have more students identified by the principal as being "below average" and academic schools will have more students identified as being "educationally gifted." Comprehensive schools will include the entire range of students but will differ in the proportions at each level and thus in their description along the variable of academic ability we defined in Chapter IV. Therefore, although the two variables -- type of school and type of student -- are related, we want to discern the independent effects of each on the number and type of innovation adopted.

Closely related to the problem above is the fact that some innovations might be more appropriate for one type of school than another. However, as we discuss in Appendix G, the judges were not very clear in distinguishing between the innovations along these lines. We assume that by and large (with the exception of language laboratories) the innovations are equally appropriate in all types of schools and that if we find differences between the types of schools, it is because one organizational form is more amenable to innovation. On the other hand, we will keep this factor in mind, particularly if it appears that differences in numbers of innovations derive from those few which have special applications.

In the original NASSP survey there was no question asking for precise information about whether the school was a comprehensive, vocational or strictly academic high school. Therefore, our determination of school type derives from a combination of indirect indicators. The first of these indicators is a question asking whether "the curriculum is so organized that students can move from one program of studies to another without major difficulty, e.g., commercial studies to total academic?"[1] Any school which responded "yes" to this question was automatically considered a comprehensive school. This was 86% of the total population of schools. For those schools which responded "no" another question was used to distinguish the academic from vocational schools. This was a question asking for "the percentage of students in grades eleven and twelve participating in the occupational education program."[2] To be classified as an academic school the principal must have responded "0-10%" (the lowest possible category of response) and to be classified as a vocational school the principal must have responded "31% or more" (the highest category of response). Once schools had been classified using this combination of variables, we crosschecked these classifications against other questions within the survey as well as outside information. The other questions included the basis for student enrollment (A-15) and the number of foreign languages in the program. We also checked our classifications in two further ways: first, against the name of the school which occasionally identifies its task (i.e., some high schools have the label Vocational School as part of their official name); and second, against the information provided by some cities as to what function particular schools serve in their programs. For instance, in New York City we made sure that such schools as Bronx High School of Science and Stuyvesant High School had been correctly identified as academic schools.

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[1] Question G-13 in NASSP survey.

[2] Question G-57 in NASSP survey.

Most of the schools in our sample (and indeed, most American schools as a whole) are comprehensive high schools. Since there are only 62 single function schools (27 academic and 35 vocational schools) in our population, we will not be able to study the latter type of schools intensively. However, we can compare the two types of schools in terms of the number and "quality" of innovations adopted in each. (In a later portion of this chapter when we discuss internal differentiation we will focus exclusively on the comprehensive schools since we will not have enough cases to differentiate among the single function schools in this manner.)

The comprehensive high schools are far more likely to be innovative than either the academic or vocational schools (Table VI.6). Forty-nine percent of the comprehensive schools have high innovation rates whereas among academic schools only 27% have high rates and among vocational schools the proportion with high rates drops to 17%. Thus at first glance it seems that complexity of task as defined by the range of types of students attending the school is related to innovation. Below we will support this finding more fully.

School type is not related to the discrimination with which innovations are adopted in the same manner as the innovation rates; i.e. there is no basic

TABLE VI.6

INNOVATION RATES AND PROPORTION OF QUALITY INNOVATIONS ADOPTED BY TYPE OF SCHOOL

Type of School	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
Academic	27%	3.1	27%	39.9	(26)
Vocational	17%	3.1	41%	44.6	(29)
Comprehensive	49%	4.8	36%	44.3	(555)

difference between discrimination in comprehensive versus single function schools. However, there are differences between the three types of schools when examined individually: both the comprehensive and the vocational schools are likely to adopt a high proportion of "high quality" innovations (means of 44.3 and 44.6 respectively) whereas the academic schools are less discriminating (mean of 39.9). This is surprising particularly since when we looked at the sample as a whole we found that the "high" academic quality schools were more discriminating than the low academic quality schools. (See Table IV.14, above.) In trying to explain this finding we observed that relatively few of the academic schools adopted those high quality innovations which entail a flexible approach to student completion of course material: Non-graded Program is adopted in only 19% of all academic schools; Continuous Progress in 4% and Independent Study in 8%. Presumably schools which are under intense pressure (from the administration, parents, and the students themselves) to cover the material required for college entrance exams (and, in some cases, material for the first year of college) are not willing to experiment with alternatives which may delay student completion of this material even though they are restricted to a more rigid approach to study. Thus, the academic schools are very likely to adopt innovations which are directly related to course completion even if they are of relatively low quality: Teaching Machines are in use in 29% of the academic schools; Language Laboratory in 58%; Instructional Materials Center in 35%; and Resource Center in 23%.[1]

Two factors which might be thought to be relevant in explaining the differences between the comprehensive and specialized schools in the number of innovations adopted -- size and adequacy of physical resources -- provide us with little insight. First, although size of enrollment is related to type of school (the academic schools are most likely to be large, the vocational schools are most likely to be small; the comprehensive schools are fairly equally divided into the three categories), within none of these three types of schools is there any significant relation between size and innovation (which is not surprising since there was no relation between size and innovation for the population of schools as a whole). Second, there is only a slight relation between adequacy of physical facilities and school type: although the comprehensive schools are more likely to have adequate facilities than either the academic or the vocational schools, this relationship does not account for the higher rates of innovation among the comprehensive schools because at the same level of adequacy the basic differences between the schools remain.[1]

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[1] The table to support this analysis can be found in Appendix I.

We now want to see whether these different types of schools enroll different types of students and examine the extent to which, if any, these differences explain our findings above. Naturally, the three types of school differ in the overall academic ability of the students attending them. Comprehensive schools vary among themselves in the predominant academic quality of the students who attend them and, although most of them fall in the middle two categories (as defined in Chapter IV), there are schools at either end of the spectrum. Almost all (72%) of the academic schools have students which are of high academic quality whereas almost all of the vocational schools (88%) have below average students (Table VI.7). Thus, as was anticipated, our variable of task complexity is highly related to the variable of academic quality. Since academic and vocational schools most often have student bodies which are of either very low or very high academic ability -- the two types of schools identified as having low innovation rates in Chapter IV -- we can now determine whether the relationship is because of the type of student attending the school or because of school structure.

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[1] The tables to support this analysis can be found in Appendix I.

TABLE VI.7

ACADEMIC QUALITY BY SCHOOL FUNCTION

	School Function		
Academic Quality	Academic	Vocational	Comprehensive
Very High	44%	4%	15%
Moderately High	28	7	31
Moderately Low	16	30	37
Very Low	12	59	17
	100%	100%	100%
N =	(25)	(27)	(536)

In Table VI.8 we present the proportion of schools with high innovation rates within our classification of schools by task complexity and academic quality. The most important point about this table is that the comprehensive schools are more innovative regardless of the academic ability of the students (the only exception being based on too few cases to draw any significance from it). Thus we have evidence that the difference in innovation rates between the comprehensive schools and the other two types of schools is, in one sense, independent of the academic quality of the students attending them. The complexity of the task of an organization is positively related to the rate of program change.

TABLE VI.[illegible]

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY SCHOOL FUNCTION AND ACADEMIC QUALITY

	School Function		
Academic Quality	Academic	Vocational	Comprehensive
Very High	27% (11)	[0% (1)]	42% (76)
Moderately High	[0% (7)]	[50% (2)]	56% (167)
Moderately Low	[50% (4)]	[25% (8)	51% (198)
Very Low	[67% (3)]	13% (10)	37% (95)

It is also significant that among the comprehensive schools we find the same curvilinear relationship between the academic ability of the student body and innovation as we did for the population as a whole. Those schools which have more "average" student bodies have higher innovation rates than the schools at either extreme. The relation between academic quality and innovation neither explains nor is explained by the difference in innovation rates between multi vs. single function schools. Among the strictly academic schools there is some slight evidence that there is more innovation when the students are from the lower half of the academic spectrum, evidence which adds weight to our earlier speculation that innovation in schools (and perhaps in other organizations) is at least in part a response to an unexpected and/or unclear situation. Where students do not fall into an easily defined category (e.g., the "slow" students in academic high schools) there is more innovation, perhaps because administrators perceive a higher potential for positive results through change. Since the process of innovating by definition involves some disruption of established procedures, if administrators see very little possibility for a positive return on their efforts, the risk attendant on any innovation may seem too high a price to pay. Thus schools which have clearly identified and stable student bodies will see less reason for change. Academic schools in particular have clearly defined tasks as well as easily labelled student bodies and as a rule they do not experiment if it will interfere with the attainment of their goals. Students graduating from these schools may well be accepted by prestige colleges. But in order to attain this goal they may have been compelled to learn in a very traditional setting.

There are differences between the three types of schools in the racial composition of the student bodies in attendance (Table VI.9). The academic schools are most likely to be White schools; the vocational schools are more likely than any other type to be White Integrated schools; the comprehensive and academic schools are infrequently integrated. The reasons for infrequent integration presumably differ for the two types of schools: comprehensive schools generally draw on the immediate neighborhood for their student bodies and in most cities there is a great deal of residential segregation by race; academic schools usually have competitive exam requirements for admission. In most cities there are probably relatively few Black students who are aware of these tests and/or who can meet the stringent entrance requirements.

TABLE VI.9

RACIAL COMPOSITION BY SCHOOL FUNCTION

	School Function		
Racial Composition	Academic	Vocational	Comprehensive
WHITE	63%	38%	54%
WHITE INTEGRATED	7	38	19
BLACK INTEGRATED	7	9	7
BLACK	23%	15	20
	100%	100%	100%
N =	(27)	(34)	(552)

These differences in most prevalent racial composition explain neither the racial differences found in Chapter IV nor the school type differences reported above. Among the comprehensive schools, definitely (the only group for which we clearly have a sufficient number of cases), and among the vocational schools, probably, we find the "usual" relation between racial composition and innovation. Therefore, it is not because many integrated schools are vocational schools that they have low innovation rates or vice versa (Table VI.10).

In summing up this section, we conclude first that the differences in the types of students who attend special as opposed to comprehensive high schools do not account for the differences between these types of schools. Among the comprehensive schools we found the same relationship between the two important student characteristic variables (academic quality and racial composition) and innovation as we did for the population as a whole. Although

TABLE VI.10

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY SCHOOL FUNCTION AND RACIAL COMPOSITION

	School Function		
Racial Composition	Academic	Vocational	Comprehensive
WHITE	31% (10)	30% (10)	53% (289)
WHITE INTEGRATED	* (2)	17% (12)	33% (102)
BLACK INTEGRATED	* (2)	* (3)	57% (37)
BLACK	* (6)	* (5)	48% (105)

*There are too few cases on which to base a percentage.

it was impossible to do an equally intensive analysis among the academic and vocational schools, we found no concrete evidence that the low innovation rates in these schools are a result of the specific type of student attending these schools. However, we would argue that the differences between single and multi-function schools derive in part at least from the fact that the latter type of school has a wider range of type of students enrolled. The diversity of student types demands a diversity of faculty and administrative types. Comprehensive schools must include in the faculty teachers with varying types of training to handle the educational needs of the different types of students. A more varied staff will have more varied sources of knowledge of educational techniques which, if translated into innovative initiative, could explain the difference between comprehensive and special schools.

At the same time, we can argue that the diversity of students in the comprehensive schools engenders a situation which leaves more room for flexibility. Since the outcome of the educational process is less certain (or less clearly specified by the central administration) there is potentially more to gain or, considered from the opposite perspective, less to lose by innovating. Most of the academic schools (e.g., Bronx High School of Science in New York City and Latin in Boston) are well established and have a steady rate of student acceptance in college. They have little to gain by experimentation and a lot to lose if their students suddenly cease to meet the entrance requirements of prestige colleges and universities. Similarly, there may be little impetus for innovation in vocational schools although this may change from time to time as the definition of vocational training is modified by predictions of future labor force needs.[1]

Number of Grade Levels

Another variable in organizing schools which has been much debated by school administrators and educators is that of the most successful pattern of grade levels within the system (i.e., whether the high school should include two, three, four, five or six grades) and the complementary problem of whether or not there should be separate junior high schools.

Our interest in this question comes from our concern with the relationship of task complexity to the adoption of innovations. Schools with more grades are, by our definition, more complex because they take on a broader task, i.e., that of educating students of widely different ages and different needs. Also with more grades in the school the system problem of sequential organization becomes more complex as students have to be routed through more levels.

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[1] It is possible that what we are measuring here is actually internal differentiation (as we will see below, comprehensive schools have more complex programs). Therefore we consider this issue after our analysis of the second aspect of task complexity, the number of grades in the school.

In Table VI.11 we present the question used to distinguish among the different types of schools and the distribution of cases along this variable. In our analysis we lump together at one end of the spectrum, two and three year schools and, at the other end, five and six year schools.

TABLE VI.11

DISTRIBUTION OF SCHOOLS BY

NUMBER OF GRADES IN THE PROGRAM

Grade Levels in School Program	Percent of Schools	Number of Schools
Two or Three (grades 10-12 or 11-12)	44%	262
Four (grades 9-12)	44	261
Five or Six (grades 7-12 or 8-12)	12	67
	100%	(590)

Our initial findings show a slight curvilinear relationship between the number of grades and innovation rates (and a slight negative relationship to discrimination) (Table VI.12). Although the two and three year high schools are more likely to have high innovation rates than four year high schools, the

TABLE VI.12

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES

(5 OR MORE) BY NUMBER OF GRADES IN THE PROGRAM

Grade Levels in School Program	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
Two or Three	46%	4.0	37%	45.0	(262)
Four	39%	4.2	35%	43.0	(261)
Five or Six	53%	4.8	28%	40.9	(67)

five and six year schools are somewhat more highly innovative than either of the other two types of schools. This means that complexity as defined by the variety in age groups attending the school is not linearly related to innovation rates. Whereas broad variations in the types of students attending the schools in terms of their needs and future goals creates a situation conducive to the adoption of innovation, the effect of a greater variation in the ages of the students attending the schools is unclear.

In trying to explain the differences between the three groups of schools by number of grades we included a variety of factors in our analysis. First we looked at school size and found little help. Although the three groups of schools differ in modal size (the four year schools are most likely to be large, whereas the six year schools are generally small), these differences do not explain the curvilinear relation to innovation rates: within each of the three size categories, the four year schools have the lowest innovation rates.[1]

We turned next to a consideration of the history of age-grouping and the general level of innovation in the cities which house the schools. The three year high school is, in and of itself, an innovation of sorts and its existence in a school system may be a reflection of the willingness of the system to try new patterns. In 1920, 94% of the nation's high schools were four year programs, including grades 9-11. By 1964 only 40% of all high schools still persisted in the traditional four year pattern. Areas which changed from an 8-4 system to a 6-3-3 or 9-3 system were adapting to a nationwide movement. Interestingly, there are strong regional differences in the pattern of grades in high schools. In the Northeast, 78% of the high schools have four year programs whereas in the Prairie/Western area, almost an equal percent are of the three year variety. Six year high schools (which are also a relatively innovative form of high school) are prevalent mainly in the Southeast and Southwest where -- to some extent -- school systems tend to be smaller.[1]

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[1] The tables to support this analysis are presented in Appendix I.

This information about historical trends and regional patterns means that in examining whether one type of school is more conducive to innovation we may simply be reflecting an already existing flexibility and experimental tendency. That is, if one considers three or six year high schools "innovations," then clearly this phenomenon will be related to other innovations. Therefore, we need some means of "controlling" for the general innovativeness of the school system in order to see whether the patterns themselves -- independent of what is underlying them -- have effects on innovation rates. And, in fact, if we control for the general level of innovation in the school system (using the mean innovation scores defined in Chapter III), we find that there are no significant differences between the three groups of schools (Table VI.13). For instance, in the school systems with low innovation rates (mean scores of 3.7 or less) there is no difference at all between the proportion of three year high schools and four year high schools with high innovation rates. And the same thing is true as we move across the table to cities with high innovation rates. Unlike the variable of racial composition, the number of grades in the school is irrelevant when holding the city level of innovation constant. Therefore, we conclude that the differences lie in the school system and not in the grade structure of the school.

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[1] Robert J. Havighurst _et al._, _op_. _cit_., p. 32.

TABLE VI.13

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY NUMBER OF GRADES AND CITY MEAN INNOVATION SCORES

	City Mean Innovation Scores			
Grade Levels in School Program	Low (2.4-3.7)	Moderately Low (3.8-4.7)	Moderately High (4.8-5.4)	High (5.5-8.6)
Two or Three	26% (87)	37% (59)	59% (56)	85% (60)
Four	27% (151)	46% (48)	59% (41)	81% (21)
Five or Six	*	48% (31)	50% (16)	*

*There are too few cases on which to base a percentage.

The aspect of task structure most relevant to innovation is the range of students identified by educational aspirations rather than by age. Having more grades in a school does not necessarily mean the introduction of a wider variety of types of courses, but a wider variation in level within already established courses of study.[1] This would explain why there is no relation between this variable and innovation rates since what seems to be most important about the other component of task complexity is that it entails a broadening of the types of programs made available and a wider consideration of goals, allowing for a more flexible interpretations of what teaching techniques and schedule arrangements might be most appropriate. And as we have implied, this is true both because in these schools (comprehensive schools) the outcome of the educational process is less clear and because many different types of teachers must be included on the faculty.

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[1] As we have showed, this type of structure is determined at the central office rather than at the individual school level.

It is important to note here that so far none of the indicators of complexity which would demand more sophisticated administrative machinery *inhibit* the adoption of innovations. Schools with six grades in them have as many innovations as schools with only two or three; schools on double sessions have as many innovations as schools on a single session day;[1] and schools with a wide range of types of students have as many, and in fact, more innovations than schools with a more selective enrollment. Therefore it seems clear that a complex structure need not inhibit the rate of change and, moreover, that when this structure is called forth for reasons of variety rather than "duplication" of effort, the structure is actually conducive to change. We investigate this idea further below as we examine horizontal differentiation.

Horizontal Differentiation: Program Complexity

In the first half of this discussion of school complexity we argued that schools which enrolled a broader variety of students had a more complex task structure. In this half of our exploration of the variable of complexity we actually count ~~the~~ number or variety of programs offered and ask whether the precise degree of horizontal differentiation is related to the adoption of innovation in schools.

Several studies in the literature employ similar measures of complexity in their analyses of the adoption of innovations. However, in each case the operational definition *depends* on their being an occupational specialty associated with the program.[1] When we examine the effects of internal differentiation on innovation we can only consider the variety of different courses offered and not the presence of occupational specialties, since we have no way of knowing whether, in fact, there is a specialist available for each course or program. Although in many cases the presence of a specific course will entail the hiring of a specialist and therefore be identical to an occupational classification, this need not always be the case. For instance, the same individual may teach both French and German and the inclusion of both languages in the program need not reflect the creation of two different staff positions.

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[1] Cf. above, Chapter V, p. 162.

In our analysis of this aspect of complexity our basic question is whether horizontal differentiation -- as measured by the variety of courses offered in the school -- is related to the number of innovations adopted in a school. We will look at the relation of horizontal differentiation from two additional viewpoints. As is true of the variables examined above (the two measures of task complexity) we feel that program complexity entails greater system demands and, in particular, complications of allocating staff and students. A school which has a greatly varied program will have the attendant problem of ensuring that each student obtain the schedule that he/she wants and needs and therefore may not be able or willing to take on additional administrative tasks such as those involved in arranging for team teaching, flexible scheduling, etc. Thus, we might anticipate that schools with complex programs will implement fewer of the innovations which increase the demands on the administrative staff, i.e., fewer of the innovations which are difficult to implement. (See discussion in Chapter II.) On the other hand, it may be that schools with more complex programs can handle the increased demands of such innovation because they have already committed themselves to flexibility and have established mechanisms to handle such system problems.

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[1] For example, cf. W. Heydebrand and Noell, op. cit., p. 305. G. Hage and Aiken, op. cit., p. 33, use a similar measure but they include the level of professionalism as well. While we lose the clarity of the operational definition of say, Hage and Aiken, we feel that there is an advantage to using a measure which is independent of the specific characteristics of the staff involved, since we can then examine the issue of professionalism separately. (See below, Chapter VII.)

Second, the specific items which make up our index of program complexity (see below) are likely to involve some cost to the school. For example, the introduction of another foreign language even if it does not necessitate the hiring of a new teacher will necessitate the purchase of new books and other relevant materials. The introduction of a new occupational education program will entail the purchase of equipment and, perhaps, expansion of existing shop facilities. To the extent that some of the innovations included in our dependent variable involve high cost, there may be a conflict of priorities. Therefore we want to examine the relationship of program complexity to the proportion of high cost innovations adopted.

Program complexity refers to the number of different types of courses and special programs available in the school. Included in this variable are such items as the number of different foreign languages available, the number of different occupational education programs and the availability of such special programs as work-study, etc. The complete list of items can be found in Appendix I along with the proportion of schools including each item in the program. In Table VI.14 we present the distribution of schools along this variable of program complexity, as well as the cutting points which are used to divide the population into dichotomous or trichotomous groups.

TABLE VI.14

DISTRIBUTION OF SCHOOLS

BY PROGRAM COMPLEXITY

A: Entire Distribution of Schools

Program Complexity (Items Included in the Program)	of Schools	of Schools
0 - 2	2%	11
3	2	14
4	2	13
5	5	33
6	7	46
7	8	52
8	12	79
9	14	91
10	14	93
11	14	92
12	11	72
13	7	46
14 - 16	2	13
	100%	656

B: Dichotomous Categories

Program Complexity	Percent of Schools	N
Low (0-9)	52	341
High (10-16)	48	315
	100%	656

C: Trichotomous Categories

Program Complexity	Percent of Schools	N
Low (0-8)	38%	249
Medium (9-10)	28	184
High (11 or more)	34	223
	100%	656

There are two issues pertaining to this variable which we want to mention before we begin the analysis of its relation to the number and type of innovation adopted. First, our measure of program complexity is, to some extent, a measure of "innovativeness," since almost every item included in the index is (or was at one time) an innovation. However, since our measure of innovation itself is limited to practices related to curriculum or instruction (and excludes definitely any single course or program), the two do differ. To the extent that our measure of program complexity is a measure of innovation, it is a measure of a different type of innovation and one which need not be associated with innovative teaching techniques or arrangements of students.

A second problem is that our measure of program complexity may actually be a measure of the school's resources: richer schools may be more likely to install the special programs and courses which make the instruction varied and enticing. However, we find that there is no relation between the complexity of the school's program and the general adequacy of the school's physical resources as defined in Chapter V. Therefore, we conclude that the two measures have different roots.[1]

As we can see in Table VI.15A program complexity is strongly related to the adoption of innovations (r = .34). The more complex schools adopt more innovations. Moreover, the fact that this is true among the comprehensive schools alone (Table VI.15B) indicates that our measure of program complexity is different from our measure of task complexity.[2] Each type of complexity is important and has its own relation to the adoption of innovations.

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[1] Tables demonstrating this can be found in Appendix I.

[2] In the remaining discussion we include only the comprehensive schools.

TABLE VI.15

INNOVATION RATES BY PROGRAM COMPLEXITY

	A:		B:	
Program Complexity	Percent of ALL Schools with High Innovation Rates (5 or more)	(N)	Percent of COMPREHENSIVE Schools with High Innovation Rates (5 or more)	(N)
HIGH (11 or more)	61%	(220)	62%	(214)
MEDIUM (9 or 10)	38%	(1[illegible])	40%	(167)
LOW (0 to 8)	36%	(237)	39%	(174)

The degree of horizontal differentiation in a school also determines the type of innovation adopted (Table VI.16). First, there is a slight positve relation between this component of complexity and the discernment with which innovations are selected. The schools which act to increase the variety of course offerings also select innovations with care.[1] There is also a slight negative relationship between complexity and the proportion of costly innovations adopted, although the difference is primarily between those schools which are highly complex and the other two types of schools. This may be related to the finding about the impact of complexity on the quality of innovations adopted. Schools which are committed to a highly diversified program may find it difficult to accumulate the resources necessary for a lot of new equipment and materials. Therefore they will put their money into the adoption of those innova-

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[1] We will discuss the reasons for this further below.

TABLE VI.16

QUALITY OF INNOVATIONS ADOPTED, PROPORTION OF HIGH COST INNOVATIONS ADOPTED AND PROPORTION OF LOW ADMINISTRATIVE DIFFICULTY INNOVATIONS ADOPTED BY PROGRAM COMPLEXITY

Program Complexity	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
HIGH (11 or more)	40%	45.5	(214)
MEDIUM (9 or 10)	39%	45.4	(167)
LOW (6 to 8)	31%	42.4	(174)

Program Complexity	Percent High Proportion of High Cost Innovations Adopted	Mean Proportion of High Cost Innovations Adopted	(N)
HIGH (11 or more)	31%	43.4	(214)
MEDIUM (9 or 10)	42%	47.1	(167)
LOW (6 to 8)	41%	46.8	(174)

Program Complexity	Percent High Proportion of Low Administrative Difficulty Innovations Adopted	Mean Proportion of Low Administrative Difficulty Innovations Adopted	(N)
HIGH (11 or more)	40%	32.3	(214)
MEDIUM (9 or 10)	34%	25.1	(167)
LOW (6 to 8)	29%	19.4	(174)

tions which do not necessitate a larger budget and since quality of innovations is negatively related to cost, a by-product of this attempt to save money will be the adoption of a greater proportion of high quality innovations. It is also possible that the commitment to providing a high quality education which may underlie program complexity is also demonstrated through a more discriminating approach to the adoption of innovations and that this discrimination results in money-saving.

The degree to which the program of a school is varied also affects the extent to which the school can adopt educational innovations which place a heavy burden on the administrative machinery of the school. The more complex a school, the more likely it is to adopt a high proportion of innovations which entail only minor administrative hassles. Thus while complexity does not have an inhibitory effect on the adoption of innovations per se (as was suggested by Wayland), it does inhibit the adoption of innovations which place the same type of demand on the administration as this aspect of complexity itself. Innovation in highly complex schools may be limited to those items which can be implemented without requiring fundamental restructuring. Thus it is more likely that such schools will adopt Directed Study or Back-to-Back Scheduling than Continuous Progress or Flexible Scheduling.

This finding is in line with, and helps clarify the hypothesis of Zaltman[1] that in highly complex or diversified organizations there are more innovations proposed at the initiation stage but a smaller proportion actually adopted. If a major concern is the maintenance of easy administration, the extent to which the innovations would create problems in this sphere might be an important criteria of selection. Whereas Zaltman explains the lower proportion of innovations reaching implementation as a result of a failure to reach consensus, we would say that the determination of whether an already heavily burdened administrative apparatus can take on an additional major task is also important. At the same time, it seems probable that in the process of paring down the number of innovations suggested to a manageable few, the consideration of the quality of the suggestions becomes important. As we have seen, the highly differentiated schools adopt a higher percentage of "high quality" innovations, the discrimination arising perhaps out of the process of negotiation entailed by the more complex structure.

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[1] G. Zaltman, op. cit.

The White and Black Integrated schools are more likely to have highly complex and differentiated programs than either the White Integrated or Black schools (Table VI.17). This suggests that the effort to upgrade the level of education in Black Integrated schools has been more meaningful than in Black schools where perhaps innovation has at times been superimposed on an otherwise inadequate program. In many cases the chief concern has been the visibility of the innovations rather than the quality of the educational experience. The White Integrated schools have neither high innovation rates nor highly diverse programs. When we look at the relationship of program complexity to the adoption of innovations within each of the four types of schools we see that it is quite strongly related in all the schools with the possible exception of the Black Integrated schools (Table VI.18). However, there are so few Black Integrated schools that this does not disturb our assertion that there is a significant relation between complexity and innovation.

Before concluding this section, we want to reconsider the issue of the number of specialists included on the staff. In Chapter V we examined this variable and its relation to innovation as an indicator of the resources

TABLE VI.17

PROGRAM COMPLEXITY BY RACIAL COMPOSITION

	Racial Composition			
Program Complexity	White	White Integrated	Black Integrated	Black
HIGH (11 or more)	48%	30%	49%	21%
MEDIUM (9 or 10)	28	32	24	36
LOW (0 to 8)	24	38	27	43
	100%	100%	100%	100%
N =	(289)	(107)	(37)	(109)

TABLE VI.18

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY PROGRAM COMPLEXITY AND RACIAL COMPOSITION

	Racial Composition			
Program Complexity	White	White Integrated	Black Integrated	Black
HIGH	59% (174)	49% (55)	58% (24)	57% (42)
LOW	44% (115)	27% (52)	54% (13)	41% (63)
Percent Difference	+15	+22	+4	+16

available. Our finding there that it was unrelated to innovation (except at the extreme end) indicates that the inclusion of a number of different occupational specialties unrelated to instruction per se will not contribute to the generation of new ideas about teaching methods. Horizontal differentiation as measured by program complexity is related to innovation primarily because it means that the faculty will be more varied in background and experience, and therefore more aware of and responsive to a wide variety of different educational techniques. By contrast, differentiation in other spheres need not result in the adoption of this type of innovation. We assume that in our innovation index if we had included new techniques in guidance counselling or psychological help, the inclusion of a wider variety of this type of specialist would be relevant. We conclude as a general proposition that for differentiation to be conducive to innovation there must be some (intrinsic) relation between the sphere of differentiation and the type of innovation under consideration.

This means, of course, that in most cases consideration of these issues will face the difficulty we encountered of distinguishing between the range of activities to include in a measure of differentiation and the measure of innovation itself. For this reason, it may be important that the activities included in the differentiation measure always be identified with an occupational specialist (an identification we could not make with certainty in our analysis) and that the innovations themselves specifically exclude any specific staff position. When an innovation entails an occupational specialty it will be hard to distinguish from the differentiation itself.

With complexity (both task complexity and internal differentiation) we have our first non-student related variable which is related to innovation within all types of schools as defined by racial composition. The other variables we have considered -- in particular, the internal climate variables and the resource variables -- have not been related to innovation in the White schools. This led us to conclude that there were basic differences between the determinants of innovation in the different schools as defined by racial composition. Here, however, we have variables which are related to innovation in all the schools suggesting that the relationships are of great importance and worthy of further investigation. As we move on with the analysis we will see that there are few equally significant variables in this sense.

ADMINISTRATIVE STRUCTURE

In this chapter we have moved from a discussion of variables which describe the structure of the school in broad terms (size, number of grade levels, function) to a measure which is more detailed (horizontal differentiation) and somewhat more difficult to interpret. In part the difficulty arises out of the fact that our data allows us to examine the innovation process at only one point in time -- i.e., the number of innovations currently in use -- and therefore does not reveal at which stage in the process the various dimensions of complexity are related to innovation.

A major theme in the literature on this topic is that when one finds complexity and innovation in the same organization it is because the complex structure entails the recruitment of a staff whose backgrounds, areas of expertise, and goals for the organization are so varied that a wide range of innovations will be considered. We have argued similarly in our discussion above although we could not do so with certainty because of the ambiguity surrounding the existence of an occupational specialty for some of the programs included in our measure of horizontal differentiation and because we did not consider the level of professionalism at all. However, we feel that this explanation is incomplete insofar as it ignores the important area of administration. As we mentioned above, in the literature there are some clues about the relationships between complexity, the distribution of power and authority and innovation. For instance, Burns and Stalker argue that the differing expectations of the members of a highly complex organization result in more conflict about what should or should not be done.[1] Similarly, as we noted above, Wilson's suggestion that "high diversity in the organization leads to organizational members conceiving and proposing more innovations but not adopting these innovations" is based on the argument that the high diversity (complexity) makes it difficult for any one source of authority to force some consensus toward agreement as to which of the many proposals should be implemented.[2] Thus there appears to be a basic conflict between the search for the awareness of the innovation and implementation.

It is to just such questions that we turn our discussion now. Although we cannot examine these issues in as much detail as might be useful, we will look at a variety of variables to see if they help to shed light on the relationship between the distribution of power and authority in a school and the adoption of innovation, and moreover, whether they can help us clarify and elaborate on our findings about the relationships of task complexity and horizontal differentiation to innovation.

In considering the distribution of power and authority we start first by considering the size of the administrative staff vis-a-vis the teaching staff, and then turn to the manner in which the Principal relates to this staff, that is we move from the structure of staff organization to the dynamic interrelationships.

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[1] This research is discussed in Zaltman, op. cit., p. 139.

[2] Ibid.

The relative size of the administrative staff in an organization vis-a-vis the non-managerial staff is a variable which is variously interpreted by different investigators. In a discussion of "hierarchy of authority," Corwin defines the ratio as an expression of the "prominence of administration," thus leaving its meaning vague: neither the number itself nor the word "prominence" identifies what the organization looks like.[1] In this and similar instances we assume the variable is meant to refer to the hierarchization component of bureaucratization. Yet, the same variable can be employed as a relfection of the specialization aspect of bureaucratization, the implication being that a high ratio of administrators indicates a fairly complex division of labor and consequently a high degree of specialization.[2] In many organizational analyses a precise distinction between these two meanings is unimportant; for example, when the goal of the research is to consider the relationship of the variable with respect to other intra-organizational measures. With respect to innovation, the difference is crucial. A high degree of hierarchization or stratification within an organization has been found to have a negative relationship to the adoption of innovations. For instance, Ben-David found that where there is a high degree of stratification in the organization of medical research, there is a slower rate of change.[1] Citing this as evidence, Hage and Aiken offer the general proposition that "the greater the stratification, the lower the rate of change."[2] Others have aruged similarly on the grounds that the more levels of authority the innovative suggestion has to pass through, the greater the chance that it will be screened out because it violates the status quo of the organization.[3] Thus Griffiths asserts that the more hierarchical the structure of an organization, the less the possibility of change.[4] And Mort, Skogsberg, Collins and Ebey all found that "clearer, more simplified lines of organization may be associated with adaptable schools."[5] In contrast, if the division of labor in terms of specialization is the factor most related to the relative size of the administrative staff one might anticipate that there will be positive effects on the adoption of innovation, particularly if the various departments are given a degree of autonomy. Specialization among staff members could induce the consideration of a greater variety of innovations for the same reason as diversification at the structural level, i.e., more sources of knowledge and ideas about the organization. And if, in fact, the decision-making apparatus is decentralized, further benefits might accrue, although there is some conflict about the relationship between centralization of authority and innovation.[6]

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[1] Ronald G. Corwin, "The School as an Organization" in Sam D. Sieber and David E. Wilder (eds.), The School in Society (New York: The Free Press, 1973), p. 167.

[2] For a complete discussion of this measure and its relation to bureaucratization, see James L. Price, Handbook of Organizational Measurement (Massachusetts: D.C. Heath and Company, 1972), p. 19-21.

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[1] Joseph Ben-David, "Scientific Productivity and Academic Organization in Nineteenth-Century Medicine," The Sociology of Science, ed. Bernard Barber and Walter Hirsch (New York: The Free Press, 1962), pp. 305-328.

[2] Hage and Aiken, op. cit., p. 45.

[3] Zaltman, op. cit., p. 140.

[4] Griffiths, op. cit., p. 434.

[5] This research is summarized in Ross, op. cit., p. 4.5.

[6] See our discussion of centralization below, pp. 78-79.

As we have indicated the measure we have available for use in this context does not allow us to distinguish between a large administrative staff organized in a strictly hierarchical fashion and one organized as more distinct horizontal units. Hidden in our measure are both the structure of the organizational staff and its more dynamic elements. In spite of this we do consider the relation between the ratio of administrators and teachers and innovation within schools. Our data allows the inquiry. And since by considering a number of different schools there is likely to be a range to the ratio and we can at least ask whether the degree of "top-heaviness" is related to the adoption of innovations in this type of organization. Further, although the measure hides the specific structure of the administrative staff, with the help of other variables we may be able to interpret the measure more fully and argue its meaning as specialization or hierarchization in specific cases.

The complete range of our administrative ratio variable is presented in Table VI.19.[1] As we can see there are great differences between the schools: some schools have as many as one administrator to every two teachers whereas others have as few as one administrator to every 22 teachers. The overall mean for this population of schools is 1:10. (In the analysis below we use the trichotomous categories presented in Part B of Table VI.19.)

The higher the ratio of administrators to teachers in a school the higher the number of innovations adopted. "Top-heaviness" is not a deterrent to innovation: the more highly bureaucratized schools (no matter how the staff is organized) are not hampered when it comes to adopting innovations. We hypoth-

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[1] Several questions were used to create this variable: the number of staff members (B-8) and the number of administrators as indicated on the Principal's questionnaire (22-26). Because we could only obtain the necessary information for those schools which participated in the Principal's Survey, our analysis includes only one-half of the total population of schools.

TABLE VI.19

DISTRIBUTION OF SCHOOLS

BY RATIO OF ADMINISTRATORS TO TEACHERS

A: ENTIRE RANGE OF THE DISTRIBUTION

Number of Administrators to Teachers	Percent of Schools	Number of Schools
1:2 to 1:4	5%	17
1:5 to 1:6	14	49
1:7 to 1:8	17	59
1:9 to 1:10	20	69
1:11 to 1:12	14	49
1:13 to 1:14	14	49
1:15 to 1.22	16	55
	100%	(347)

B: TRICHOTOMOUS CATEGORIES

Number of Administrators to Teachers	Percent of Schools	Number of Schools
HIGH (1:2 to 1:9)	30%	124
MEDIUM (1:10 to 1:12)	34%	117
LOW (1:13 to 1:22)	36%	106
	100%	(347)

esize that the positive relation of this variable to innovation derives more from specialization of the administrative staff than hierarchization, but that the fact that the relation is a weak one is because the staff is not so organized in all cases. There is a slight positive relation to the quality of innovations adopted. As with differentiation at the structural level, we assume that the interplay of a wide variety of staff members' suggestions results in a more discriminating adoption of innovations (Table VI.20).

A larger ratio of administrators to teachers ("top-heaviness") neither inhibits nor aids the adoption of innovations which are difficult to implement. This suggests that the measure is too gross to differentiate among those manners of organizing an administrative staff which would aid the implementation of complex innovations and those which would inhibit such innovation, but that a large administrative staff in and of itself need not be an impediment. A large staff can be flexible.

Looking to a number of variables included in the previous discussion of school structure, we found that the administrative ratio is unrelated to school size and school function (and maintains its relation to innovation within comprehensive schools alone).[1] It is related to program complexity although the relationship is not a strong one: schools with more highly complex programs are likely to have higher administrator-teacher ratios (Table VI.21). Presumably a larger administrative staff is called forth to handle the system problems associated with a more complex program. In examining the relationships of the two variables (the administrator-teacher ratio and program complexity) with innovation simultaneously, we found that of the two, horizontal differentiation is more strongly related to innovation (average difference of 12.3 vs.

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[1] Tables can be found in Appendix I.

TABLE VI.20

INNOVATION RATES, QUALITY OF INNOVATIONS ADOPTED AND PROPORTION OF LOW ADMINISTRATIVE DIFFICULTY INNOVATIONS ADOPTED BY ADMINISTRATIVE-TEACHER RATIO

Administrative-Teacher Ratio	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	(N)
HIGH (1:2 to 1:9)	53%	5.1	(124)
MEDIUM (1:10 to 1:12)	51%	4.9	(117)
LOW (1:13 to 1:22)	43%	4.2	(106)

Administrative-Teacher Ratio	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
HIGH (1:2 to 1:9)	35%	45.4	(124)
MEDIUM (1:10 to 1:12)	40%	45.7	(117)
LOW (1:13 to 1:22)	39%	43.8	(106)

Administrative-Teacher Ratio	Percent High Proportion of High Administrative Difficulty Innovations Adopted	Mean Proportion of High Administrative Difficulty Innovations Adopted	(N)
HIGH (1:2 to 1:9)	48%	30.7	(124)
MEDIUM (1:10 to 1:12)	51%	31.2	(117)
LOW (1:13 to 1:22)	54%	31.1	(106)

6.5) (Table VI.22). The ratio may reflect specialization but it is also diluted by some degree of hierarchization and therefore is not as strongly related to the adoption of innovation as the variable of horizontal differentiation (which is free from hierarchization). The most highly innovative schools are those with both a high ratio of administrators and high program complexity. We conclude that when a high ratio arises out of the need for specialists to administer a variety of programs the administration is an innovative one and, moreover, that schools with complex programs need a relatively large staff if they are also going to be able to consider innovations at a high rate.

TABLE VI.21

ADMINISTRATIVE RATIO BY PROGRAM COMPLEXITY

	Program Complexity	
Administrative-Teacher Ratio	LOW (0 to 9)	HIGH (10 to 16)
HIGH (1:2 to 1:9)	25%	29%
MEDIUM (1:10 to 1:12)	40	43
LOW (1:13 to 1:22)	35	28
	100%	100%
N =	(125)	(180)

TABLE VI.22

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADMINISTRATIVE RATIO AND PROGRAM COMPLEXITY

	Program Complexity	
Administrative-Teacher Ratio	LOW (0 to 9)	HIGH (10 to 16)
HIGH (1:2 to 1:9)	47% (32)	62% (53)
MEDIUM (1:10 to 1:12)	43% (51)	59% (78)
LOW (1:13 to 1:22)	45% (42)	51% (49)

As mentioned above, another thing the ratio does not reveal is the internal workings of the staff (i.e., both the structure and the dynamics of the administration are hidden in the statistic). In an attempt to uncover the dynamic elements we turned to the question of how frequently the principal met with the administrative staff. (Both the question and the distribution of schools are presented in Table VI.23.) A high number of meetings might mean centralization or attempts to formalize procedures, but since the meetings may be used as a forum for the exchange of ideas, more frequent meetings might reflect flexibility. We assume that a principal concerned primarily with directives would issue these on paper and that meetings are more likely to represent an attempt to discuss policy and reach a consensus.

TABLE VI.23

DISTRIBUTION OF SCHOOLS BY FREQUENCY OF ADMINISTRATIVE STAFF MEETINGS

On the average, how frequently did you hold formal meetings with your administrative staff during the 1968-69 school year?	Percent of Schools	Number of Schools
Once a month or less	15%	54
About twice a month	18%	67
About three times a month	13%	43
About four times a month	34%	118
More than four times a month	20%	72
	100%	(354)

We find that the number of meetings a principal holds with his staff is related positively to the number of innovations introduced in the school: 42% of the schools in which the principal met only infrequently with his administrative staff (twice a month or less) had high innovation rates in contrast to 52% of the schools in which the principal met very frequently with his staff. Moreover, returning to the issue of structure, we find that a higher ratio of administrators to teachers and a greater frequency of meetings are associated (Table VI.24). Without meeting often we suspect it is difficult for a large staff to reach a consensus on policy particularly if this staff is organized as a number of horizontal (semi-autonomous) units. A rigidly hierarchical staff could administer the school through directives from the top down. When we examine the relationship of the ratio and the number of meetings

TABLE VI.24

FREQUENCY OF ADMINISTRATIVE STAFF MEETINGS BY ADMINISTRATIVE RATIO

Administrative-Teacher Ratio	Percent of Schools with High Frequency of Staff Meetings (more than twice a month)
HIGH (1:2 to 1:9)	73% (97)
MEDIUM (1:10 to 1:12)	63% (143)
LOW (1:13 to 1:22)	64% (106)

TABLE VI.25

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY FREQUENCY OF ADMINISTRATIVE STAFF MEETINGS AND ADMINISTRATIVE RATIO

	Administrative-Teacher Ratio		
Frequency of Administrative Staff Meetings	LOW (1:13 to 1:22)	MEDIUM (1:10 to 1:12)	HIGH (1:2 to 1:9)
Infrequent (twice a month or less)	41% (39)	47% (53)	37% (27)
Frequent (more than twice a month)	44% (67)	53% (90)	60% (70)

to innovation simultaneously we find that the number of meetings is related to innovation only when there is a high ratio (Table VI.25). A large administrative staff can only function as an impetus to the adoption of innovations when there is a mechanism for easy communication among the staff members themselves and between the staff and the principal. But this mechanism makes no difference if there is not the division of labor among the administrative staff members engendering a higher number of innovative suggestions.

Not surprisingly, the relative size of the administrative staff is an important consideration only in those schools which have autonomy vis-a-vis the central office (Table VI.26). Highly centralized school systems dictate policy and no variation in administrative staff structure has any independent determination on the adoption of innovations. Only in decentralizaed school systems does the organization (relative size) of the administrative staff become important.

TABLE VI.26

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADMINISTRATIVE RATIO AND SCHOOL SYSTEM DECENTRALIZATION

	School System Decentralization	
Administrative-Teacher Ratio	LOW (2.8-4.6)	HIGH (4.7-7.8)
HIGH (1:2 to 1:9)	50% (60)	58% (64)
MEDIUM (1:10 to 1:12)	41% (58)	53% (53)
LOW (1:13 to 1:22)	48% (41)	38% (60)

Above we noted that the great majority of the variables we examined in their relation to innovation were important only within the non-White schools and that the organizational complexity variables were the first to be significant in all schools. With administrative ratio we have the first variable relevant only in the White schools. While there are only minor differences between the four types of schools which have a high ratio of administrators to teachers (1:9 or fewer),[1] it is only in the White schools that the relative size of the administrative staff has noticeable impact on innovation (Table VI.27): among White schools as for the population as a whole, the ratio of administrators to teachers is positively related to innovation. At present we cannot draw any conclusions from this fact. However, as we will see in Chapter VII, other staff attributes are also relevant only within White schools. With this additional evidence we will be able to argue more strongly that innovation rates in these schools are influenced by factors which are unimportant in the other three types of schools.

TABLE VI.27

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADMINISTRATIVE RATIO AND RACIAL COMPOSITION

	Administrative-Teacher Ratio		
Racial Composition	LOW (1:13 to 1:22)	MEDIUM (1:10 to 1:12)	HIGH (1:2 to 1:9)
WHITE	44% (64)	57% (77)	60% (55)
WHITE INTEGRATED	28% (18)	33% (27)	29% (14)
BLACK INTEGRATED	* (7)	55% (11)	* (8)
BLACK	45% (15)	54% (24)	47% (17)

*There are too few cases on which to base a percentage.

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[1] The precise figures are: White schools -- 28%, White Integrated schools -- 23%, Black Integrated schools -- 31%, and Black schools -- 30%.

CHAPTER VII

TEACHING STAFF

In considering innovation in schools and the effects that the teaching staff may have on the change process, the distinctive characteristics of the teaching occupation become relevant. Teachers are classed as "quasi-" or "semi-professionals."[1] Members of occupations that are commonly regarded as "professions" are characterized by at least three features: "1) They perform a personal service that is regarded as indispensible in modern society; 2) They possess a high degree of technical competence; and 3) They enjoy considerable autonomy in their work."[2] While we do not challenge the first of these three components, the degree to which teachers possess the second two is open to considerable doubt (as we will discuss further momentarily). Moreover, there are certain attributes of the teaching force that distinguish the occupation from most recognized professional groups, e.g., the numerical domdominance of women, low prestige, and recruitment from middle and lower-middle classes.[1]

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[1] Whether one uses the term quasi-profession or semi-profession is a matter of personal choice. In opting for the former term Sieber has argued:

> We prefer this term to the more common usage of "semi-profession" because the latter suggests an exact quantitative measurement, when in fact quasi-professions vary considerably in their approximation to full-fledged professions. Also, the adjective "quasi" contains a *subjective* element, in the sense of "resemblance" to full-fledged professions, that is missing in the term "semi."

Sieber, *op. cit.*, p. 128.

[2] *Ibid.*

Teachers, however, do see themselves as professionals. And to the extent that they adopt the full-fledged professions as their reference group there may be a gap between occupational reality and the aspirations of teachers. With respect to innovation, in particular, it has been argued that this self-image as professionals, rather than leading them to initiate change, results in resistance to innovations in situations where the teachers see possible infringements on their insecure status. For instance, some teachers might find in the suggestion of team teaching a threat to their own professional autonomy. Miles argues this view when summarizing the relevant research of others:[2]

> Thus it seems likely that local innovative efforts are restricted by the fact that the teacher's role is actually that of a functionary who has little power to initiate system-wide change, but because of the ideology concerning professionalism . . . -- tends to resist innovative demands, like most professionals in bureaucratic organizations.

We have, thus, a number of interrelated issues. The first of these is whether or not the teachers actually have autonomy within their own schools, that is, whether the specific context in which they work permits them to operate as professionals. Most of the discussions dealing with this question point to a negative answer. The argument runs that, although it is possible for teachers to introduce changes within their own sphere of influence, i.e., the classroom, they are in a weak position vis-a-vis the larger system. This argument emphasizes the role of the teacher within the school as that of a functionary rather than an independent professional, an individual upon whom the bureaucratic requirements of the school places serious impediments to free action. For instance, with respect to autonomy, Brickell has described working conditions as follows:[1]

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[1] Some further discussions of teaching as an occupation can be found in Dan Lortie, "The Partial Professionalization of Elementary Teaching," The Semi-Professions and Their Organization, ed. Amitai Etzioni (New York: The Free Press, 1969), pp. 103-145; Blanche Geer, "Occupational Commitment and the Teaching Profession," The School Review, 74 (Spring, 1966), pp. 31-47; and Ronald G. Corwin, "Militant Professionalism, Initiative and Compliance in Public Education," Sociology of Education, 38, 4 (Summer, 1965), pp. 310-331.

[2] Matthew Miles, "Some Properties of Schools as Social Systems," Change in School Systems, ed. Goodwin Watson (Washington: National Training Laboratories, National Education Association, 1967), p. 14.

> . . . the teacher is not an independent professional, not a private entrepreneur free to alter his working situation when he chooses -- not free to decide what he will teach to whom at what time and at what price. He is instead a member of the staff of a stable institution.

Our data support this argument. We find that it is only rarely (and usually for insignificant matters) that the authority for decisions in a school rests with the teachers; most decisions must have the authorization of the principal. In the questionnaire distributed to Principals we asked for an identification of the level at which decisions pertaining to a number of areas of school policy were made.[2] There were twelve items on the list covering both specific classroom concerns (homework, teaching techniques), and more general school-wide concerns (discipline procedures, dress and hair regulations).[3] For each area the principal was given the option of indicating that the "decision [was] made by individual teachers and department chairmen without the approval of the principal." In 31 percent of the schools the principals gave this response for only one (or no) items; in 42 percent of the cases this was true for two items; and in only 29 percent of the cases principals so responded for three or more items. (The highest score received by any school was five.)[1] Because the mean score was so low (1.9) we conclude, with others, that in most schools authority rests squarely with the principal and/or the central administration and not with the teaching staff. Moreover, since there is so little variation between schools in the degree of autonomy granted to the teachers (the variable range is from none to five, but 83 percent of the cases fall between one and three) we do not feel that we can make comparisons of adoption rates in schools with a greater or lesser degree of autonomy. A rudimentary analysis of this variable is, however, available in Appendix K.

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[1] Brickell, op. cit., p. 19.

[2] The questionnaire referred to here is the Principals' Questionnaire reproduced is Appendix B.

[3] The complete list of items can be found in Appendix B, Question 14 of Section A.

Knowing that teachers cannot initiate innovation on their own responsibility does not settle the question, since we still cannot predict what type of a force they will be within a school. Even if they do not have the responsibility for innovations, it seems probable that the teaching staff can influence the change process, negatively -- by resistance or sabotage -- or positively -- by the proposal of ideas or enthusiastic support of trial projects.

We do have better data on the second "professional" characteristic -- degree of technical competence -- and this may have implications for innovation. More highly trained teachers might be more open to innovation because they bring into each situation a commitment to keep up with the literature and to respond appropriately to a perceived need for change. On the other hand, the fact that even though they have the requisite training they are not treated as professionals by the organization might embitter and lead to resistance. Thus we want to know how variations in degree of training of the teaching staff affect the innovation rates in schools.

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[1] The entire distribution of schools along this variable can be found in Appendix K.

Although with respect to the issue of professionalism per se the degree of competence attained through training is most relevant, when considering teachers and innovation in schools we also have to investigate a number of other issues. The first of these is teaching experience. Variations in the average number of years the teaching staff has been employed might have important implications for change. New teachers might be more willing to employ innovative techniques because they have no stake in established procedures and can adopt them with less personal loss, whereas more highly experienced teachers might be resistant to any suggestion that they change their own particular styles. Thus in addition to autonomy and degree of professional training we want to consider the mean number of years of teaching experience for the staff and the rate of turnover in the school.

In some research the variables of professional training and experience have been examined simultaneously but the results of this research are contradictory. The Mort studies found it was schools with older and more experienced teachers (a situation found in the wealthier suburbs) that showed the highest adaptability levels.[1] On the other hand, Anderson found resistance to innovation highest among teachers with the most experience and professional training.[2] Thus, past research leaves unanswered the question of what effects variations in either teacher training or experience have on the adoption of innovations within schools.

Teacher morale (an internal climate variable which at the student level we found to be important) might be relevant as well. Will teachers who are satisfied with the context in which they work be more or less resistant to innovation than teachers with serious grievances? Following our discussion of training and experience we will introduce some of the theoretical arguments surrounding this issue of morale and investigate the data for the schools in our sample.

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[1] Ross, *op. cit.*, p.

[2] Anderson, *op. cit.*, p.

In this chapter, then, we examine several different teaching staff attributes -- training, experience and commitment to the organization -- and relate each of these to the number and, when appropriate, the quality of innovations adopted in the schools. We have two additional interests. The first derives from our concern with the quality of education available to different groups in this society. One of the major ways in which there are differences between schools as defined by the type of students attending them is in the characteristics of the school staff. As we will see below, White schools are far more likely than any of the other three types of schools to have a staff composed of a high proportion of teachers with M.A. degrees as well as more highly experienced teachers. Such differences are of paramount concern to parents in ghetto areas who complain that not only do their children attend the most poorly equipped and overcrowded schools (a claim that was not totally supported by our data) but that they also face teachers who are badly trained, inexperienced, and anxious to be transferred to higher status schools. In our analysis below we will investigate whether these differences have any impact on the adoption of innovations or explain the variations by racial composition noted throughout this study.

Second, at the end of Chapter VI we noted that the variable describing the organization of the staff -- the administrative-teacher ratio -- had a slight relationship to the adoption of innovations, but that this was true only in the White schools. This led us to hypothesize that the determinants of innovation in these schools stem more from staff than resources or internal climate factors. We will be interested in seeing whether, in fact, this hypothesis holds up as we examine other staff-related variables both in this chapter and in the next where we discuss the principals.

Teacher Training

In measuring professionalization by virtue of technical competence we use the proportion of the staff in a school that has acquired an advanced degree, in this case at least an M.A.[1] For the schools in our population the proportion of the staff with at least an M.A. degree ranges from a low of between zero and ten percent to a high of over 81 percent. The overall mean is between 30 and 40 percent.[2] In the majority of the schools in our sample less than half of the staff has acquired professional training.

In Table VII.1 we present the relation of this variable to the adoption of innovation in schools. As we can see, there is a very slight curvilinear relation between the proportion of the staff with at least an M.A. degree and the rate at which schools adopt innovations. Schools staffed with a "moderately high" proportion of M.A.'s (41% to 50%) innovate at a slightly higher rate than schools in which either a smaller or larger proportion of the staff has achieved that degree. The weak curvilinear relation of this aspect of professionalization to the rate at which the organization adopts innovations might be the result of contradictory forces. As we suggested above, and as has been argued by others, individuals with professional training are more

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[1] A similar measure of professionalization is used in an analysis of innovation in settlement houses staffed by social workers. Cf. W. Heydebrand and J. Noell, *op. cit.*, p. 305.

[2] The entire distribution for this variable is presented in Appendix J.

TABLE VII.1

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED

BY PERCENT OF TEACHING STAFF WITH AT LEAST AN M.A. DEGREE

Percent of Staff with M.A. Degree	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
VERY LOW (under 31%)	42%	4.5	42%	44.8	(170)
MODERATELY LOW (31% to 40%)	44%	4.5	30%	42.5	(129)
MODERATELY HIGH (41% to 50%)	49%	4.9	38%	46.0	(127)
VERY HIGH (over 51%)	44%	4.5	34%	44.0	(188)

likely to keep up to date in the literature of their fields. They are aware of new techniques and can comprehend their applicability in any particular situation. At the same time, it has also been pointed out that teachers often actively resist the demands of the administrative staff to change their teaching styles. Such resistance might well be more extreme in those situations where the teachers have a higher level of professional training and feel more resentful of infringements on their turf. Thus the curve may be a result of these competing influences: perhaps the peak of the curve is where professional "morality" overcomes the reluctance to accede to the administration. When the teaching staff is more completely trained it becomes welded into a resistant block.

There are no consistent differences in the quality of the innovations adopted among schools classified by the proportion of teachers with at least an M.A. degree: the fact that the administration has to justify its decisions to more highly qualified judges does not ensure discrimination.

The qualifications of teachers differ by the classifications of students by racial composition: the White schools have the best trained staffs, the Black Integrated schools have the least well-trained staffs (Table VII.2). These differences do not account for the variations in the rate at which the schools innovate. In particular, we cannot explain the low innovation rates among the White Integrated schools by the presence of a less qualified teaching staff: even when we control for the proportion of M.A.'s on the staff the White Integrated schools consistently have the lowest innovation rate (Table VII.3).

TABLE VII.2

PERCENT OF TEACHING STAFF
WITH AT LEAST AN M.A. DEGREE
BY RACIAL COMPOSITION OF THE SCHOOL

	Racial Composition			
Percent of Staff with M.A. Degree	White	White Integrated	Black Integrated	Black
VERY LOW (under 31%)	22%	34%	41%	43%
MODERATELY LOW (31% to 40%)	21	20	25	18
MODERATELY HIGH (41% to 50%)	22	15	18	21
VERY HIGH (over 51%)	35	31	16	18
	100%	100%	100%	100%
N =	(315)	(127)	(41)	(122)

That our understanding of the relation between professional training and innovation is very incomplete is revealed as we further examine Table VII.3. It is only among the White schools that we find the same curvilinear relation between teacher training and innovation as we did for the population as a whole. Perhaps here teacher resistance and the conflicting sense of professional behavior operate (with respect to innovation) in the manner suggested above. Among the Black schools, however, the curvilinear relationship is the reverse of that in the White schools: Black schools are more likely to have higher innovation rates if the staff is either very well trained or very poorly

TABLE VII.3

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY PERCENT OF STAFF WITH M.A. DEGREE AND RACIAL COMPOSITION

A

	Percent of Staff with M.A. Degree			
Racial Composition	Very Low (under 31%)	Moderately Low (31-40%)	Moderately High (41-50%)	Very High (over 51%)
WHITE	47% (72)	49% (66)	59% (70)	48% (104)
WHITE INTEGRATED	33% (42)	26% (23)	22% (18)	29% (38)
BLACK INTEGRATED	50% (16)	50% (10)	* (7)	* (7)
BLACK	52% (50)	39% (23)	42% (26)	52% (23)

B

	Percent of Staff with M.A. Degree		
Racial Composition	LOW (40% or less)	HIGH (over 40%)	Percent Difference
WHITE	47% (138)	52% (174)	+5
WHITE INTEGRATED	30% (65)	26% (56)	-4
BLACK INTEGRATED	50% (26)	57% (14)	+7
BLACK	43% (73)	46% (49)	+3

*There are too few cases on which to base a percentage.

trained. Clearly, other factors are operating.

What is considered appropriate professional behavior may be determined by the context. Innovation rates will vary not only with the degree to which the teachers have acquired professional training but also with the degree to which the context, as defined by the composition of the student body, provides support for innovative activity.[1] In this respect the academic ability of the students may be more relevant than their race. The differences in staff training between schools classified by academic quality are less extreme than the differences between schools classified by race (Table VII.4). However, the former variable does delineate conditions under which the professionalization of the teaching staff is more significantly related to innovation.

TABLE VII.4

PERCENT OF TEACHING STAFF WITH AT LEAST AN M.A. DEGREE BY ACADEMIC QUALITY OF THE STUDENTS

	Academic Quality			
Percent of Staff with M.A. Degree	Very High	Moderately High	Moderately Low	Very Low
VERY LOW (under 31%)	21%	29%	33%	36%
MODERATELY LOW (31% to 40%)	24	18	20	22
MODERATELY HIGH (41% to 50%)	21	24	19	20
VERY HIGH (over 51%)	34	29	28	22
	100%	100%	100%	100%
N =	(92)	(179)	(208)	(114)

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[1] Other possibilities we explore further below are the number of years of experience of the teaching staff and its commitment to the organization.

In schools with very low academic quality students, degree of professionalization is strongly, positively related to innovation (Table VII.5). In fact, when such schools are staffed by highly trained teachers they no longer have the lowest innovation rates. Teachers who are well trained and who choose to teach below average students may be more willing to experiment to achieve results. The professional ideology here favors innovation, perhaps because of a strong service orientation. The reference group may be that of an occupation like social work.[1] In contrast, there is some indication that schools serving very high academic quality students are less innovative when the staff is highly trained. Perhaps in such schools, where more strictly academic teaching takes place, the ideology concerning professional behavior is different. The reference group for these teachers is more likely to be college professors. They are less likely to consider innovative techniques appropriate learning tools since they are teachers of an academic body of material. Thus the conservatism we have previously noted among the high academic quality schools may derive in part from the composition of the teaching staff and the values they hold. (Among the middle academic quality schools the pattern between professionalization and innovation is less clear. Since these schools generally have high innovation rates we assume that the professional resistance is neutralized.)

Ideally we would now reexamine the relationship between the professionalization of the staff and innovation rates within schools classified by racial composition and academic quality. Unfortunately with so few cases such an

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[1] Heydebrand and Noell found a moderately strong relationship between degree of professionalization and innovation in organizations staffed by social workers.

TABLE VII.5

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY PERCENT OF STAFF WITH M.A. DEGREE AND ACADEMIC QUALITY

A

	Percent of Staff with M.A. Degree			
Academic Quality	Very Low (under 31%)	Moderately Low (31-40%)	Moderately High (41-50%)	Very High (over 51%)
Very High	30% (20)	59% (22)	37% (19)	32% (31)
Moderately High	58% (52)	47% (32)	51% (43)	48% (52)
Moderately Low	50% (70)	44% (41)	59% (39)	47% (58)
Very Low	23% (40)	39% (26)	39% (23)	48% (25)

B

	Percent of Staff with M.A. Degree		
Academic Quality	LOW (40% or less)	HIGH (over 40%)	Percent Difference
Very High	43% (44)	34% (50)	- 9
Moderately High	53% (84)	49% (95)	- 4
Moderately Low	52% (101)	51% (97)	- 1
Very Low	28% (66)	43% (48)	+15

analysis is impossible. A more complete understanding of the relation between professionalization and innovation in different contexts is left to future research.[1]

Teaching Experience

Although teacher training alone does not seem to have a significant impact on the adoption of innovations in schools -- the overall curvilinear relationship was not very strong and could not be reproduced within certain sub-groups -- it is possible that the number of years of teaching experience is an important factor, either alone or in combination with teacher training. Among principals, as we will see in the next chapter, innovation rates are negatively related to the number of years the principal has held his position and others have found that length of tenure is inversely related to innovativeness among administrators (although our findings for superintendents did not reveal a similar pattern). Among teachers too it seems likely that a lengthy period of employment would lead to resistance to change, particularly when change would necessitate abandoning practices perfected through the years. Teachers who have established themselves through a long period of employment might begin to conceive of themselves as being more autonomous professionals whether or not they have the training to back their claim. Change initiated by administrators might be considered a threat to such hard-earned self-esteem. Moreover, after many years in the occupation teachers might develop a cynical attitude towards innovation. Having been exposed to numerous exciting "new" ideas many of which were abandoned after a short time, they might respond dispassionately to the most recent crop. In general, then, we anticipate a negative relationship between length of teaching experience and innovation rates although, without detailed attitudinal data, it will be difficult to determine precisely which factors are operating.

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[1] Degree of autonomy would clearly be an important factor here as well. In our analysis of autonomy (Appendix K) we consider the relationships between the professionalization of the staff, autonomy and innovation rates.

We use two separate measures of length of teaching experience. The first is a mean score for the entire teaching staff, a score based on the number of years of experience accumulated throughout the teachers' careers (not just in the school of present employment). The second measure is the rate of turnover of the teaching staff, a variable which enables us to consider whether "new blood" or changes in the staff of a school affect the rate at which innovations are adopted. Although turnover is frequently used as a measure of staff morale, we do not so define it here because we want to isolate the impact of change in the teaching staff composition and because we have a clearer indicator of staff satisfaction.

Mean Number of Years of Teaching Experience

There are broad differences between the schools in our study in the mean number of years of experience of the teaching staff. While some schools are staffed by teachers with an average length of experience of only two or three years, other staffs average as high as fourteen years. The mean number of years of experience for the staff of all schools is 7.5.[1]

There is, as was anticipated, a slight *negative* relationship between the mean length of experience of the teaching staff and the adoption of innovations in the schools (Table VII.6). The discrimination with which schools adopt innovations has a slight curvilinear relation to average length of staff experience. Teachers whose training is more recent might be able to discriminate

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[1] The entire distribution for this variable is presented in Appendix J.

TABLE VII.6

INNOVATION RATES AND QUALITY OF INNOVATIONS ADOPTED BY MEAN LENGTH OF TEACHING EXPERIENCE

Mean Number of Years Teaching Experience	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Percent High Proportion of Quality Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
VERY LOW (5 years or less)	48%	5.0	37%	44.9	(159)
MODERATELY LOW (6 or 7 years)	48%	5.0	36%	43.3	(168)
MODERATELY HIGH (8 or 9 years)	41%	4.2	34%	43.9	(209)
VERY HIGH (10 years or more)	42%	4.3	39%	45.9	(101)

among innovations better than teachers who are farther away from any kind of theoretical perspective on education. And teachers with more lengthy experience also might be highly qualified judges: having been around for a long time and having seen educational "fads" come and go, they may be sharp discerners of true value, although their protective feelings towards their own influences may create a generalized resistance to innovation. The relationship is not a strong one, but it would be interesting to pursue these hypotheses on an individual teacher attitude (rather than general school) level.

There are significant differences between the schools identified by racial composition and this characteristic of the teaching staff. White schools are far more likely to have highly experienced teachers than are schools with a sizeable proportion of Black students (Table VII.7). And it is primarily among the White schools that number of years of teaching experience maintains its negative relation to innovation rates (Table VII.8). Forty-four percent of the White schools with highly experienced staffs have high innovation rates in contrast to fifty-seven percent of the White schools staffed by less highly experienced teachers. This finding supports our hypothesis that among the White schools innovation is more likely to be affected by the composition or organization of the staff than it is among the other three types of schools. So far we have seen that the relationship between the administrator-teacher ratio, perhaps training, and now, number of years of experience, observed for all schools persisted only within the White schools. This strongly indicates that the staff is more likely to be an important factor in these schools.

In the White schools the teachers may be able to affect innovation rates: if by dint of their professional training or lengthy experience they are resistant to innovation they may be able to slow down or halt the change process.

TABLE VII.7

MEAN LENGTH OF TEACHING EXPERIENCE BY RACIAL COMPOSITION OF THE SCHOOL

Mean Number of Years Teaching Experience	Racial Composition White	 White Integrated	 Black Integrated	 Black
VERY LOW (5 years or less)	23%	20%	29%	36%
MODERATELY LOW (6 or 7 years)	25	31	32	24
MODERATELY HIGH (8 or 9 years)	35	35	27	23
VERY HIGH (10 years or more)	17	14	12	17
	100%	100%	100%	100%
N =	(325)	(124)	(41)	(122)

TABLE VII.8

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY MEAN LENGTH OF TEACHING EXPERIENCE AND RACIAL COMPOSITION

Racial Composition	Teaching Experience HIGH (8 years or more)	 LOW (7 years or less)	Percent Difference
WHITE	44% (169)	57%	-13
WHITE INTEGRATED	36% (61)	33% (63)	- 7
BLACK INTEGRATED	50% (16)	52% (25)	- 2
BLACK	42% (49)	46% (73)	- 4

In the other three types of schools -- White Integrated, Black Integrated and Black -- other factors must motivate the decision to innovate. Of course, it is possible that lengthy experience in Black or Black Integrated schools engenders a desire for or approval of innovation. For instance, if conditions are bad enough the teachers may develop a passive "anything goes" attitude. And highly experienced teachers who choose to remain in such situations may have a greater commitment to providing an innovative education. However, we feel that is is more likely that length of experience operates in the same manner here as in the White schools -- i.e. develops into resistance to change. In the Integrated and Black schools there are forces which override teacher inclinations. If the administration is determined to convince the public that it is upgrading its schools, it will do so by adopting high-visibility innovations, and the inertia of the teaching staff cannot stand in its way. Before we argue this more strongly we want to pursue several other issues including our second teacher experience variable.

The differences among schools staffed by more or less highly experienced teachers become even clearer when we control for teacher training (which had a separate relation to innovation). Training and experience are themselves related: schools with a high proportion of M.A.'s on the staff are more likely to have highly experienced teachers than schools with a low proportion of M.A.'s (mean length of experience of nine years vs. six years).[1] Teachers who have acquired professional training have made a greater investment and are more likely to remain in the occupation.

Schools staffed by highly trained but relatively inexperienced teachers are the most innovative schools (Table VII.9). And length of experience is

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[1] The complete table can be found in Appendix J.

TABLE VII.9

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY PERCENT OF TEACHING STAFF WITH AT LEAST AN M.A. DEGREE AND MEAN LENGTH OF TEACHING EXPERIENCE

	Teaching Experience	
Percent of Staff with M.A. Degree	HIGH (8 years or more)	LOW (7 years or less)
HIGH (over 40%)	42% (173)	52% (132)
LOW (40% or less)	41% (131)	46% (184)

more strongly _negatively_ related to innovation among those schools staffed by a high proportion of M.A.'s than among those schools staffed by less highly trained teachers (difference of 10% vs. difference of 5%). Over time teachers grow more rigid, particularly if they have professional training to back their desire to maintain their own teaching styles. This finding runs counter to that of Ross, mentioned above, who concluded that it was schools with older and more experienced teachers that showed the highest adaptability levels. It may be that in the smaller, less highly bureaucratized school systems such as those studied by Mort _et al._, less resistance to administrative control develops over time than in systems where teachers are more often treated as common employees. In the smaller systems there may be more opportunities for personal contact with the administration than in large urban school systems where teachers are shuffled around and considered by the central office primarily in terms of contracts and pensions.

Teacher Turnover

Average annual turnover rates in urban high schools are frequently quite high, ranging from an annual turnover of between zero and five percent of the staff to over 30 percent, with an overall mean of slightly over ten percent.[1] There is a moderately strong curvilinear relation between turnover and innovation rates: the highest innovation rates are found in those schools with a moderately high proportion of new teachers (between 11 and 15%) as shown in Table VII.10. The addition of new staff members may be an asset with respect to innovation (as is true of newly trained teachers) but when too large a proportion of the teaching staff is new the consequent disruption may impede the adoption of innovations. Innovation is most likely when there is some change in the staff composition; too much change in this sphere prohibits innovative changes.

TABLE VII.10

INNOVATION RATES BY TEACHER TURNOVER

Teacher Turnover	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	(N)
VERY HIGH (16% or more)	44%	5.0	(127)
MODERATELY HIGH (11-15%)	52%	5.1	(136)
MODERATELY LOW (6-10%)	46%	4.5	(214)
VERY LOW (0-5%)	42%	4.4	(151)

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[1] The complete distribution of this variable is presented in Appendix J.

As we would expect there are differences in average turnover rates among the schools classified by student race. The Black Integrated schools are most likely to have an annual turnover of more than ten percent of the staff (54%), next highest are the White Integrated schools (51%), somewhat lower are the Black schools (45%) and considerably lower are the White schools (36%).[1] There are many reasons why teacher turnover is so high in the Integrated schools. First, order is most likely to be problem in these schools; teachers probably prefer a safer environment.[2] This may be particularly important to teachers in the Black Integrated schools, most of whom are white. (Black schools have a higher proportion of Black teachers than do Black Integrated schools; in fact, the Black Integrated schools rarely have Black teachers. The staff in these schools has a totally different racial composition than that of the student body. This is less often the case in the White, White Integrated and even the Black schools.)[3] As we will see below, teacher morale is extremely low in these schools: because of the problem of safety, particularly for white teachers, these schools are highly unfavored. They are staffed largely by teachers waiting for transfers to "better" schools. In contrast the White schools have extremely stable faculties. These are the schools to which most teachers (especially white teachers) aspire. Having achieved this goal they are likely to stay put unless they move onto an administrative position or leave the occupation completely.[4]

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[1] The complete table for this analysis is presented in Appendix J.

[2] Cf. our analysis of order and safety in Chapter IV.

[3] The tables to support this analysis of staff racial composition are presented in Appendix J.

[4] Howard Becker has described how the teachers in urban public schools generally start their career in a slum schools and immediately attempt to move

Turnover, like mean number of years of teaching experience, is most strongly related to innovation in the White schools: sixty percent of the White schools with a high annual staff turnover have high innovation rates in contrast to forty-four percent of the schools with low turnover rates (Table VII.11). In these schools the absence of a stable, potentially rigid staff is a necessary precondition of innovation. Without "new blood" these schools become conservative. Established routines take on a permanent cast. The teachers as a body are unlikely to choose change. Among the other three types of schools if there is innovation it takes place regardless of the potential resistance of a conservative teaching staff. In fact, when the Black Integrated schools achieve this stability they become the most innovative schools. Whereas high stability results in stagnation in White schools, in the Black Integrated schools such a state is necessary before other types of change can begin to occur. Obviously, the reasons for varying turnover rates are an important factor. We turn now to a consideration of teacher morale.

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out to a "better" school. Only a small proportion of teachers make an adjustment and choose to stay in the slum schools. Howard S. Becker, "The Career of the Chicago Public School Teacher," American Journal of Sociology, Volume 52 (1952), pp. 470-477.

TABLE VII.11

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER TURNOVER AND RACIAL COMPOSITION

	Teacher Turnover		
Racial Composition	LOW (0-10%)	HIGH (over 10%)	Percent Difference
WHITE	44% (206)	60% (115)	+16%
WHITE INTEGRATED	29% (61)	30% (63)	+ 1%
BLACK INTEGRATED	52% (19)	50% (22)	- 2%
BLACK	43% (66)	47% (53)	+ 4%

Teacher Morale

In their book on organizational change, Hage and Aiken hypothesize that "the higher the job satisfaction, the greater the rate of program change."[1] Their reasoning is essentially that people who are satisfied with their jobs are more committed to the organization in which they work and that a receptivity to new ideas for improving the products or services of the organization flows from this commitment. Hence, one finds that committed workers are likely to both suggest and accept innovations. Furthermore, they argue that only an organization with generally high morale can successfully implment new activities and weather the ensuing organizational stress induced by the changes. To support their assertions Hage and Aiken cite several industrial studies in which the findings were, briefly, that workers more readily accepted and even initiated change when they were satisfied with their jobs.[1] Educational researchers have made similar findings: for instance, Ross reports a slight negative relation between staff turnover and adaptability in schools.[2]

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[1] Hage and Aiken, op. cit., p. 53.

From the point of view above, job satisfaction and high morale are primarily viewed as preconditions for organizational change. One could also view them as resultants, however, if one assumes that an organization in which there had been much innovativeness and ensuing excitement would be one in which morale would be high, particularly if these innovations resulted in improved working conditions. Therefore, since we cannot talk definitely about cause and effect, our discussion will be phrased in more general terms.

In the NASSP survey the principals were asked: "To what extent is teacher dissatisfaction or unrest, instead of factors such as family, health or further education, reflected in the yearly turnover of teachers?"[3] Seventy-six percent of the principals responded "Little, if at all," twenty percent responded "Somewhat, but not major" and a mere four percent responded "A major factor." In the analysis that follows the latter two responses are combined to indicate low teacher morale. We use this question as our only indicator of morale although we are aware that because the judgment was made by the principal rather than by the teachers themselves, it is open to considerable bias and distortion.

In schools in which the principal views teacher dissatisfaction as being a cause of turnover (i.e., morale is low) innovation rates are somewhat lower than schools in which teacher morale is high (38% high innovation rates vs. 47% high innovation rates). Thus we can conclude that in schools, as in other organizations, job satisfaction is related to the rate at which the organization can innovate, although we cannot determine the sequence of events.

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[1] Ibid.

[2] Ross, op. cit., p. 457.

[3] Cf. Appendix A, p. 8.

Naturally, teacher turnover and morale are highly related: those schools in which dissatisfaction is an important determinant of turnover, in fact, have the highest turnover rates (Table VII.12). Nevertheless, if we look at innovation rates by turnover and morale simultaneously, we find that each variable is independently related to innovation (Table VII.13A). At equivalent levels of turnover it is always the "high morale" schools which have the highest innovation rates. And the curvilinear relationship between turnover and innovation remains although it is more marked in the "high morale" schools. For the "low morale" schools as well, a moderately high level of turnover (11-16%) is most conducive to innovation.

TABLE VII.12

TEACHER TURNOVER BY MORALE

	Teacher Morale	
Teacher Turnover	LOW	HIGH
VERY HIGH (16% or more)	44%	12%
MODERATELY HIGH (11-15%)	27	20
MODERATELY LOW (6-10%)	21	37
VERY LOW (0-5%)	6	30
	100%	100%
N =	(145)	(460)

TABLE VII.13

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TURNOVER AND MORALE

A

Teacher Turnover	Teacher Morale HIGH	Teacher Morale LOW
VERY HIGH (16% or more)	39% (64)	51% (58)
MODERATELY HIGH (11-15%)	42% (40)	57% (91)
MODERATELY LOW (6-10%)	36% (30)	42% (173)
VERY LOW (0-5%)	* (9)	43% (138)

B

Teacher Turnover	Teacher Morale HIGH	Teacher Morale LOW
HIGH (11% or more)	40% (104)	55% (149)
LOW (10% or less)	34% (39)	42% (311)

*There are not enough cases on which to base a percentage.

If we dichotomize turnover and crosstabulate it with teacher morale we can consider four types of schools individually (Table VII.13B). The schools which have the highest innovation rates are those in which morale is high and turnover is high as well. These schools are constantly hiring new teachers and, presumably because they are popular with the teachers, the principals can select the best applicants. The reverse is true in the low morale-low turnover schools. Here where dissatisfaction prevails the teachers are unable to leave -- either because of a job shortage or because teachers have to "serve time" in such schools. These schools are unable to weather the stress of organizational change and they remain static. The other two types of schools -- the low morale-high turnover and high morale-low turnover -- fall somewhere between the two extremes described above. They are relatively stable and can adopt innovations: in the latter case although they don't receive the benefits of staff turnover there is little pressure for teachers to leave whereas in the former case, low satisfaction is relieved by high turnover.[1]

Not surprisingly, teacher morale is highest in the White schools (Table VII.14). As we mentioned in our discussion of turnover, most teachers in urban schools are white and almost all teachers attempt to transfer to the high status white schools. When they have reached this goal they are more likely to at least report satisfaction since they are aware that there are few better opportunities within the school system. The lowest rate of teacher satisfaction is found in the Black Integrated schools (as was anticipated) and the relation between morale and innovation is strongest here (Table VII.15). We assume that the high morale-high innovation schools are those in which a concerted effort is being made to salvage the educational process and that the relationship between innovation rates and morale is cyclical, i.e., an improvement in one affects the other and so on.

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[1] So far as we can tell with our data, these relationships show up (with some variations) among each of the four types of schools as classified by race. In White schools the low turnover-low morale schools do not fare as poorly in terms of innovation as in the entire population. However, among Black schools the same type of school has extremely low innovation rates: these are the schools where teachers serve out a waiting period before moving on to a better position. No one in such schools has any impulse to improve the lot of the students. (The tables to support this analysis can be found in Appendix J.)

TABLE VII.14

TEACHER MORALE BY RACIAL COMPOSITION OF THE SCHOOLS

	Racial Composition			
Teacher Morale	White	White Integrated	Black Integrated	Black
HIGH	86%	70%	43%	68%
MODERATELY LOW	13	25	46	25
EXTREMELY LOW	1	5	11	7
	100%	100%	100%	100%
	(321)	(124)	(41)	(119)

TABLE VII.15

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER MORALE AND RACIAL COMPOSITION

	Teacher Morale		
Racial Composition	HIGH	LOW	Percent Difference
WHITE	51% (278)	44% (43)	+ 7%
WHITE INTEGRATED	31% (87)	27% (37)	+ 4%
BLACK INTEGRATED	61% (18)	43% (23)	+18%
BLACK	48% (77)	40% (42)	+ 8%

The adequacy of the physical resources was found to be an important variable with respect to student morale (and the problem of order) in that it enabled us to identify conditions of extreme turmoil and low innovation.[1] Although the internal climate variables are not strongly related to the primary physical resource variable, we found that for the entire population of schools (and most significantly for the Integrated and Black schools) at least one positive asset was necessary: schools lacking both adequate facilities and hearty spirit were unable to innovate.

Highly similar findings emerge from a consideration of the adequacy of the physical resources and teacher morale. Although there is not a strong relation between the two variables -- 72% of the schools with inadequate facilities have high teacher morale versus 80% of those with adequate facilities -- the combined effects of low morale and inadequate facilities can be devastating (Table VII.16). Moreover, although the physical resources are more significantly related to innovation than teacher morale (mean percentage difference of 16 for resources vs. seven for morale), it is primarily when the facilities are inadequate that morale is strongly related to innovation. Innovation results in stress. This stress is more readily weathered in schools with adequate resources. Perhaps these schools can defuse the dissatisfaction of teachers by providing incentives for cooperation or importing auxiliary staff to handle innovations repugnant to the regular staff. In the schools with less adequate facilities the cooperation and/or tolerance of the staff becomes very important; without it innovation is rarely possible.

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[1] Cf. the analysis above, pp. 152-155.

TABLE VII.16

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER MORALE AND ADEQUACY OF PHYSICAL RESOURCES

	Physical Facilities	
Teacher Morale	Inadequate	Adequate
LOW	30% (88)	50% (56)
HIGH	41% (229)	53% (230)

The adequacy of the physical resources was found to be more often an impediment to innovation in the Integrated and Black schools than in the White schools and, in combination with student morale, defined conditions of extremely low innovation rates. The same is true of the relations between teacher morale, physical resources and innovation within schools classified by racial composition. First, teacher morale is highly related to the adequacy of the physical facilities in the Black and Black Integrated schools: there are differences of 20 percent and 14 percent respectively in the proportion of teachers with high morale between schools with adequate and schools with inadequate facilities (Table VII.17). Teacher dissatisfaction in these schools derives from the basic inadequacies of the environment; in White schools it has different roots, roots not identified in our data. Second, it is predominately within the Integrated and Black schools (so far as we can tell with our data) that we find the relationship between teacher morale, adequacy of the physical facilities and innovation that we found for the population as a whole, i.e., that morale is a significant deterrent to innovation in schools with inadequate physical facilities (Table VII.18). (Strangely, the reverse is true in the White schools: here teacher morale is related to innovation only when the physical resources are adequate.)

TABLE VII.17

PERCENT OF SCHOOLS WITH HIGH TEACHER MORALE

BY PHYSICAL FACILITIES AND RACIAL COMPOSITION

	Physical Facilities		
Racial Composition	Inadequate	Adequate	Percent Difference
WHITE	72% (163)	79% (158)	+ 7%
WHITE INTEGRATED	69% (67)	71% (55)	+ 2%
BLACK INTEGRATED	35% (21)	55% (20)	+20%
BLACK	60% (66)	74% (53)	+14%

Teacher morale as a variable operates in much the same way as did student morale: it is related to innovation as a rule and even more so in those schools in which there are poor physical resources. However, in contrast to the student variables of morale and order, its relation to innovation persists when we control for racial composition. Whereas student morale is unrelated to innovation in White schools, teacher morale has a slight relation to innovation in these, as well as in the other three types of schools, although the relationship is not of major significance in any but the Black Integrated schools. We have suggested that teacher morale has different sources in the

TABLE VII.18

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER MORALE, PHYSICAL FACILITIES AND RACIAL COMPOSITION

	Physical Facilities			
	Inadequate		Adequate	
	Teacher Morale			
Racial Composition	LOW	HIGH	LOW	HIGH
WHITE	46% (26)	47% (137)	41% (17)	55% (141)
WHITE INTEGRATED	9% (21)	22% (46)	50% (16)	44% (39)
BLACK INTEGRATED	28% (14)	* (7)	* (9)	63% (11)
BLACK	33% (27)	41% (39)	50% (14)	54% (39)

*There are too few cases on which to base a percentage.

different types of schools: in the White schools in contrast to the other schools it is unrelated to the physical resources. Perhaps here it is more tied to "professional" concerns -- e.g., autonomy, respect from the administration. Whereas in the Integrated and Black schools low teacher morale may generally indicate a deteriorating or poor condition, in the White schools it may indicate that the teachers are not, in fact, being treated in the manner in which they wish to be. Thus, its impact, although having the same negative effect on innovation, may operate through a different set of mechanisms.

Turning back to the first three variables included in this chapter -- professionalization, mean number of years of experience, and staff turnover -- we conclude that, given the lack of autonomy, the impact of teachers vis-a-vis the adoption of innovations is a negative one. When teacher characteristics are related to the number of innovations adopted in a school, those characteristics which might be considered assets, from the perspective of education per se, are related negatively or not at all to the adoption of innovation. Schools staffed by highly professional teachers (in terms of training) are no more innovative than schools staffed predominately by teachers with little or no more than a Bachelors degree; schools with more experienced teachers are less innovative than schools in which the teachers are new to the occupation; and schools with a low rate of staff turnover are less innovative than schools with a moderately high rate. In general, schools need new teachers with new ideas if they are going to implement innovations. Highly experienced teachers are more conservative, perhaps because they don't want to change their own techniques, perhaps because -- particularly when there is low turnover -- they develop an effective lobby against change.

Of course, these generalizations need qualifying. First, none of the relationships we are discussing is overly strong. Second, we do not actually have attitudinal data from the teachers. Our hypotheses are based on findings for schools in which the staff as a whole is characterized by a single statistic. The precise dynamics of staff interaction are hidden from view. We can only assume that the low innovation rates in schools with highly experienced teachers represent effective teacher resistance, but we cannot differentiate among the actions of the teachers in such a school or elucidate the actual processes by which this resistance operates. Some schools with highly trained staffs are extremely innovative. We assume that such schools have developed conflict-reducing mechanisms that effectively defuse teacher resistance, but there is no proof for such a hypothesis at present. Our data does not allow for all the necessary statistical controls. We did explore some additional factors. For instance, we found that the adequacy of the physical resources is unrelated to professionalization, experience and turnover, and that all of the relationships described above persist when we control for school function (i.e., are maintained among the comprehensive schools alone). However, not all possibilities have been considered. In particular, we assume that variations in degree of autonomy and the nature of the relationship of the teaching staff to both the administrative staff and the principal himself, might be important variables. We were unable to pursue the analysis of such variables (both because we had a limited number of cases and because we did not find great variations between schools) but we suspect that a more refined measure of autonomy would have clarified the findings (cf. discussion in Appendix K).

Finally, the general findings reported above apply only within the White schools. While teacher morale is related to innovation in all schools, we do not know whether it is cause or effect in any of these schools. With the other staff-related variables -- organization of the administrative staff as well as the three discussed in this chapter -- there is not the same question. The evidence supports the conclusion that staff "control" or "obstruction" of the adoption of innovations is a significant factor only in White schools. The White schools are stable institutions: the external environment is supportive and the internal climate is calm. Although not all White schools have fully adequate facilities (as measured by physical or staff resources) such inadequacies do not deter innovation. Student disorder is relatively infrequent and, when it occurs, offers no impediment to innovation. In such organizations, the staff is an important factor with respect to innovation. Perhaps because White schools are more likely to have decentralizaed decision-making structures and have been free of public criticism, the central administration can leave them to their own devices. Crises are not frequent and under normal conditions the staff becomes more important.

None of the above holds true for the Integrated and Black schools. These schools are crises-ridden and although many factors are related to innovation, the composition and characteristics of the teacher staff are not. These schools are more frequently housed in centralized school systems. The decision to innovate is therefore more likely to be made at a higher level. These decisions are influenced by the general adequacy of the facilities and the morale (both student and teacher). But how teachers feel is less likely to be a consideration; mollifying the staff is not a major concern when change is taking place under pressure.

CHAPTER VIII

THE PRINCIPALS

Most of the theory and research relating to the role of teachers in the innovation process implies that they have their greatest impact as obstructors rather than as initiators of change. The same is not true of the principals in schools. As with superintendents there is the suggestion that they are in an advantageous position to determine the level of innovation in their own schools; the arguments about the superintendent's importance deriving from his position in the administrative hierarchy can be applied to the principal as well.[1] But with the principals these statements cannot be equally definitive: any individual principal's power may be circumscribed by the central administration. As we saw in Chapter III, the most innovative school systems are those in which authority is decentralized, that is, vested in the administrative staffs of the individual schools. Here we will be able to see the extent to which variations in degree of autonomy affect the principal's ability to act in an innovative fashion.

Less research has been done in the past on the association between personal and professional characteristics of principals and innovative behavior than is the case for superintendents. We will begin our discussion by examining variables describing the principal's career and background. After isolating the relevant factors we will introduce controls for decentralization and the type of school in which the principal is employed. Thus we first identify the personal-professional characteristics which are correlated with innovative behavior and then examine this behavior in light of possible limitations on freedom of action deriving from the context in which the principal operates.

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[1] Cf. discussion above, p.

Dependent Variable Measurement

Throughout the major portion of this study we have used as our dependent variable the number of innovations in use in a school. When trying to identify the conditions under which a principal acts in an innovative fashion this variable is less appropriate. Although when we were discussing superintendents we related their personal-professional characteristics to the mean number of innovations in the school system, principals differ from superintendents in two important ways. First, principals have an average length of tenure that is almost two years shorter than that of the superintendents (five vs. seven years). Thus, the number of innovations in a single school is more likely to represent the work of several principals over the past few years. Second, we assume that principals are far more circumscribed than superintendents in their ability to effect rapid changes. The influence of an innovative superintendent may be felt very quickly in a school system and it seems just to hold him "accountable" for its general level of innovativeness.

Given these arguments we decided to use as our measure of innovativeness for principals a variable which describes the rate at which he has introduced innovations in his school. By rate we are referring to the number of innovations which were introduced during the principal's tenure while taking into account the number of years of tenure.

In our survey each principal was asked to identify which innovations had been introduced while he was the principal.[1] The number of innovations intro-

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[1] Cf. Appendix B, p. 7.

TABLE VIII.1

DISTRIBUTION OF PRINCIPALS BY NUMBER OF YEARS OF TENURE AND NUMBER OF INNOVATIONS FOR WHICH THE PRINCIPAL IS RESPONSIBLE

	Number of Years as Principal (Tenure)			
Number of Innovations Introduced	1-2 years	3-4 years	5-7 years	8 or more years
None	27%	19%	12%	8%
1	17	16	11	17
2	13	12	24	10
3	11	19	12	12
4	8	13	13	12
5	12	8	6	12
6	2	6	6	10
7	5	2	6	6
8	2	2	2	6
9	1	1	2	1
10 or more	2	2	6	6
	100%	100%	100%	100%
N =	(105)	(84)	(83)	(89)

duced by a principal during his tenure in a single school ranges from none to fifteen with an overall mean of slightly over three. To determine a variable of rate we divided the principals into four (fairly equal) groups based on the number of years they had been principal in the school: one to two years, three to four years; five to seven years; and eight years or more. We then cross-tabulated these four groups by the number of innovations introduced as is shown in Table VIII.1, and drew lines to delineate first, two groups according to whether the rate of innovation was "high" or "low," and second, three groups of "high," "medium" and "low" rates. The cutting points are indicated in Tables VIII.2A and 2B. The resulting distributions of principals by rate are shown in Tables VIII.2C and 2D. The cutting points for the dichotomous distribution (Table VIII.2A) are drawn so that a "high" rate for each group of principals (by number of years as principal) represents at least one innovation for every two years in office and, for those in office eight or more years, at least four innovations in all. The cutting points for the trichotomous distributions are slightly more arbitrary: a "low" rate represents approximately one innovation for every three years in office, a "high" rate approximately one innovation for every year in office. Also motivating our decisions was a desire that the groups of principals (whether into "high" and "low," or "high," "medium" and "low") be of relatively equal size.

We also created for the principals a variable similar to that which we use to represent the proportion of "high quality" innovations adopted for schools. The distribution of this variable is presented in Table VIII.3. In the analysis that follows each principal can be given a score representing the proportion of innovations introduced during his tenure which are of high quality.

TABLE VIII.2

PRINCIPAL'S VARIABLE OF INNOVATION RATE

A: CUTTING POINTS FOR DICHOTOMOUS CLASSIFICATION OF RATE

Number of Innovations Introduced	Number of Years as Principal 1-2 years	3-4 years	5-7 years	8 or more years
None	Low	Low	Low	Low
1	Low	Low	Low	Low
2	High	Low	Low	Low
3	High	High	Low	Low
4	High	High	High	Low
5 or more	High	High	High	High

B: CUTTING POINTS FOR TRICHOTOMOUS CLASSIFICATION OF RATE

Number of Innovations Introduced	Number of Years as Principal 1-2 years	3-4 years	5-7 years	8 or more years
None	Low	Low	Low	Low
1	Medium	Low	Low	Low
2	Medium	Medium	Low	Low
3	High	Medium	Medium	Low
4	High	Medium	Medium	Medium
5	High	High	Medium	Medium
6	High	High	High	Medium
7 or more	High	High	High	High

C: DISTRIBUTION OF PRINCIPALS BY RATE (DICHOTOMOUS)

Principal's Rate of Innovation	Percent of Principals	N
LOW	52%	187
HIGH	48	174
	100%	(361)

D: DISTRIBUTION OF PRINCIPALS BY RATE (TRICHOTOMOUS)

Principal's Rate of Innovation	Percent of Principals	N
LOW	38%	138
MEDIUM	35	126
HIGH	27	97
	100%	(361)

TABLE VIII.3

DISTRIBUTION OF PRINCIPALS BY PROPORTION OF ALL INNOVATIONS INTRODUCED WHICH ARE OF HIGH QUALITY

Proportion of All Innovations Adopted of High Quality	Percent of Principals	N
None (0%)	32%	119
17% to 49%	16	58
50% to 66%	24	94
Over 66%	28	106
	100%	(377)

Personal and Professional Characteristics

Number of Years in Office (Tenure)

The first issue we explore is whether the number of years a principal has held his position -- i.e., length of tenure -- is related to the rate at which he innovates. Although we did not find this variable to be important with respect to the superintendents, others have found that administrators innovate at a faster rate at the start of a new appointment and slow down over time. Newcomers need to establish authority in the organization: one means by which they can make an early impact is by "shaking up" the system, altering traditional routines. Having so established themselves, they, like other staff members, will develop investments in specific patterns and personal relationships. After several years in office the actions of the principals may be constrained by these investments.

We find this to be the case. Newer principals, i.e., those who had only held their positions for a short period of time as of the 1968-69 school year, have a higher rate of adoption than principals who had held their positions for a longer period of time, even though the latter were personally responsible for a greater number of innovations (Table VIII.4). These very new principals, however, adopt a low proportion of high quality innovations. This suggests that the early innovation is, in fact, due to the succession situation. The new principals may simply be shaking up the system to establish authority, as is described by Gouldner in Wildcat Strike.[1] An alternative explanation is that these principals, particularly if they are just beginning their administrative careers, have to "prove themselves" to the central office and perhaps the already existing staff of the school: by introducing changes (even low quality changes) they are making sure that they are noticed.

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[1] Alvin W. Gouldner, Wildcat Strik_.

TABLE VIII.4

RATE OF ADOPTION AND MEAN PROPORTION

OF HIGH QUALITY INNOVATIONS ADOPTED

BY NUMBER OF YEARS AS PRINCIPAL

Number of Years as Principal	Rate of Innovation Low	Medium	High		Mean Proportion of High Quality Innovations Adopted	(N)
1-3 years	27%	30	43	(100%)	41.5	(105)
4-6 years	40%	40	20	(100%)	42.4	(128)
7 years or more	46%	34	20	(100%)	42.8	(128)

It remains a possibility that the lower rate of innovation of the longer-tenured principals is a product of the manner in which our variable of rate was created. First, these principals may have been doing a lot of other innovating not represented in our variable, a possibility which applies to the shorter-tenured principals as well. Second, given a short list of innovations from which to choose, it is inevitable that there will be some slow-down over time. We can see no way around this problem. However, we do assume that since our findings are in line with those of other investigators, our variable is a fairly reliable one.

Before trying to account further for this finding that new principals are more innovative and distinguishing between the two hypotheses above (which are not mutually exclusive since both may be occurring), we want to make certain that it is not spurious by examining other relevant variables which might be highly related to tenure.

Principal's Age

Newer principals, as we can see in Table VIII.5, are, in general, considerably younger than the principals who have held their positions for a longer period of time (r = .53). At the time of the study the principals ranged in age from twenty-nine to seventy-one with a mean age of fifty-one. Age is strongly related to innovation rates: young principals (29 to 52) innovate at a much faster rate than older ones (those over 52 years old), perhaps because they have more recently been in school and therefore have more knowledge of these innovations or perhaps because they are attempting to make a name for themselves as they start a career (Table VIII.6). There is no relation between the proportion of high quality innovations adopted and the age of the principals. Thus we assume that the higher rate of innovation among the younger principals is not primarily a matter of recent training: or, at least, that the training itself does not result in greater discrimination.

Since age is highly related to tenure we must control for this variable in order to identify which of the two is determining the rate at which a principal innovates. In Table VIII.7 we can see that both age and tenure are relevant factors in the determination of the rate at which a principal introduces innovations in his school. In fact, young principals who have recently assumed their present position are the only group that stands out as especially innova-

TABLE VIII.5

NUMBER OF YEARS AS PRINCIPAL BY AGE

	Principal's Age		
Number of Years as Principal	27-51	52-58	59 or older
1-3 years	69%	33%	12%
4-6 years	17	42	22
7 years or more	14	25	65
	100%	100%	100%
N =	(91)	(112)	(125)

TABLE VIII.6

RATE OF ADOPTION AND MEAN PROPORTION OF HIGH QUALITY INNOVATIONS ADOPTED BY AGE

	Rate of Innovation				Mean Proportion of High Quality Innovations Adopted	
Principal's Age	Low	Medium	High			(N)
29-51	32%	29	39	(100%)	42.6	(130)
52-58	41%	37	22	(100%)	42.3	(108)
59 or older	42%	39	19	(100%)	42.8	(123)

TABLE VIII.7

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY AGE AND NUMBER OF YEARS AS PRINCIPAL

	Principal's Age	
Number of Years as Principal	29-55	56 or older
1-5 years	65% (131)	34% (49)
6 or more years	36% (74)	43% (123)

tive. If they remain in the same position for a long time, even if they are young, they become less innovative. And a short tenure does not transform an older principal into an innovator. The succession situation alone does not engender highly innovative behavior. Both youth and relative newness to the school are necessary. This strongly suggests the "proving themselves" hypothesis. At the start of an administrative career a principal will want to make a name for himself, in part, to demonstrate that the faith of the administration in appointing him at a relatively young age is justified; in part to ensure future appointments.

Prior Appointments

In 110 Livingston Street Rogers discusses some of the problems created by promotion procedures within the New York City school system that do not allow outsiders to enter the system;[1] Schrag covers the same ground for the

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[1] David Rogers, op. cit.

Boston school system.[1] Our data demonstrate that these practices are not limited to New York and Boston. Of the 377 principals who responded to our questionnaire, only 17 (less than 5%) had come to the position of principal from entirely outside the school system. The remaining 95% we can identify as complete insiders -- those who have worked only in their own high schools and mixed insiders/outsiders. This latter group is further divided into school and system principals -- those who have worked in other schools and held a previous position in their present school; and system only principals -- those who have only worked elsewhere in the system prior to their present position (Table VIII.8). Although the latter group of principals are considered outsiders with respect to their own schools, it should be borne in mind that they have established relationships with the central administration of the school system and might have been familiar with individuals in the high schools to which they were appointed.

TABLE VIII.8

DISTRIBUTION OF PRINCIPALS BY PRIOR APPOINTMENTS

Prior Appointments		Percent of Principals	N
Complete Insiders:	School Only	9%	33
Mixed	School and System	32	113
	System Only	54	196
Complete Outsiders		5	17
		100%	(359)

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[1] Peter Schrag, op. cit.

The question is whether any of these differences in prior appointments affect the rate at which the principal innovates. And in Table VIII.9 we see that it is the complete insiders and the complete outsiders who have the lowest innovation rates. (With the latter group, because there is an extremely small number of cases, we assume sample bias may account for the actual results. We exclude this group from the remaining analysis of the variable.) There is the same relationship to the proportion of high quality innovations adopted: the complete insiders (and the complete outsiders) are lowest on this variable as well.

TABLE VIII.9

RATE OF ADOPTION AND MEAN PROPORTION OF HIGH QUALITY INNOVATIONS ADOPTED BY PRIOR APPOINTMENTS

Prior Appointments		Percent of Principals with High Innovation Rate	Mean Proportion of High Quality Innovations Adopted	(N)
Complete Insiders:	School Only	36%	39.3	(33)
Mixed	School and System	50%	42.7	(113)
	System Only	52%	43.8	(196)
Complete Outsiders		29%	37.9	(17)

Before trying to explain this relationship further we want to consider whether or not the principal has ever worked in another school system. Whereas our measure of prior appointments relates to the organizational career of the principals, appointments outside the system may relate to orientation. This variable was found to be of some importance with respect to the superintendents -- those who came to the system from outside were more innovative than those who had achieved their position by climbing up through the ranks. We did not find, however, that this was as relevant a consideration as had been implied in Carlson's work, primarily because the racial composition of the city system involved constraints on the actions of even the outsiders.[1]

We classify principals as "cosmopolitans" if they have ever worked in another school system and as "locals" if not. We are aware, of course, that this definition varies from the more general usage in which cosmopolitanism measures not only experience but actual orientation as well.[2] We have no attitude measurements. Further, we cannot consider such factors as to what types of newspapers and/or magazines a principals subscribes, and whom he takes as his reference group. While we assume that exposure to a wider variety of experiences (i.e., employment in more than one city) engenders a more cosmopolitan outlook and that this outlook will be related to an awareness of the need for and tolerance of change, there are structural considerations as well. An individual who has worked his way up to an administration position and has proved himself capable outside the system in which he is currently employed, is not as dependent on particular individuals within the system, as an individual who has been employed there throughout his entire career. It is less likely in the former case that he will have personal obligations to others in the system. He is in a freer position and can initiate change without stepping on the toes of those personally involved in his career. Thus, his appointment is less likely to exist in a web of personal relationships, promises and debts.

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[1] Cf. discussion above, p. 84ff.

[2] For a discussion of this concept with respect to influentials, cf. Robert K. Merton, Social Theory and Social Structure (Glencoe, Illinois: The Free Press, 1957), p. 387 ff. For an example of the use of a similar typology to account for patterns of innovative behavior in medicine, cf. H. Menzel and E. Katz, "Social Relations and Innovation in the Medical Profession: the Epidemiology of a New Drug," in E.G. Jaco (ed.), Patients, Physicians and Illness (Glencoe, Illinois: The Free Press, 1958), pp. 517-528; and in education, cf. Carlson, op. cit.

In fact, we do find that principals who have ever been employed outside their own school system have higher rates of innovation than principals who have remained entirely within a single city. The more cosmopolitan principals are also more discerning adopters: with a broader range of experiences behind them, perhaps, they become more aware of educational "fads" and can distinguish these from innovations which have a significant impact on the educational process (Table VIII.10).

TABLE VIII.10

RATE OF ADOPTION AND MEAN PROPORTION OF HIGH QUALITY INNOVATIONS ADOPTED BY ORIENTATION

(EVER WORKED IN ANOTHER SCHOOL SYSTEM)

Orientation: Ever worked in another school system	Rate of Innovation Low	Medium	High		Mean Proportion of High Quality Innovations Adopted	(N)
NO (Local)	32%	34%	34%	(100%)	40.0	(176)
YES (Cosmopolitan)	28%	48%	24%	(100%)	45.1	(184)

A broader range of experiences is more essential (in terms of engendering innovation) for those principals who have previously taught within their own schools before becoming principals there (Table VIII.11). In fact, the

TABLE VIII.11

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY PRIOR APPOINTMENTS AND ORIENTATION

		Orientation: Ever Worked in Another School System	
Prior Appointments		NO (Local)	YES (Cosmopolitan)
Complete Insiders: School Only		29% (17)	44% (16)
Mixed	School and System	41% (56)	58% (71)
	System Only	48% (96)	55% (100)

more local or "homegrown" the principal (in relation to his own school and/or his own school system) the less likely he is to innovate. The difference in innovation rates between cosmopolitans and locals for the two groups of principals who have previously worked in their own schools -- the complete insiders and the mixed: school and system principals -- are 15 percent and 17 percent respectively. For the mixed: system only principals the difference between the locals and cosmopolitans is only 7 percent. The narrower the range of experiences behind the principal, whether in relation to his own school or the school system as a whole, the less innovative he is.

There are two explanations for these findings. The first is the structural one which is based on the idea that the more an individual's career is the product of a single environment, the more his actions will be constrained by the debts and obligations he owes to others in the environment. A principal who has never had an opportunity to work outside a single system has no independent grounds for asserting his leadership. His ability to lead depends on the support of those with whom his career is bound. These may limit his actions, accepting his leadership only if he protects their interests. The individual from outside can administer programs without equal constraints since he has fewer personal obligations. The staff may resist his leadership and sabotage his efforts at change but he has fewer obligations to them.

The second explanation is that of attitude. It is reasonable to assume that broader experience sharpens one's insight. Comparisons between organizations are possible. Thus the individual may be enabled to make more acute judgments of what is possible and/or appropriate in any particular situation. While intensive experience in a single organization may result in a thorough understanding of that organization, it may also result in blind spots. Being accustomed to certain procedures, the individual may no longer question their efficacy or search for change.

Obviously, length of experience becomes relevant here. The constraints of employment in a single organization -- both attitudinal and structural -- can develop over time even for those who have previously been employed elsewhere. And since organizational career and orientation are both related to number of years as principal -- lengthy tenure is most frequent among the complete insiders -- we have to control for this variable.

First, examining the percent of principals with high innovation rates by tenure and cosmopolitanism, we find that tenure is more strongly related to innovation than orientation (difference of 16.5 vs. 13.5) (Table VIII.12). In fact, among those with a short tenure, cosmopolitanism is less crucial to engendering high innovation rates than among those with longer tenure. New principals innovate not only because they have to establish authority but because they have to prove themselves as well. Past experience is unimportant here. However, an extremely low rate of innovation is found among principals who have remained in a single position for a long time and have never been exposed to any other school system. These principals operate under real structural constrains as well as self-imposed blinders.[1]

TABLE VIII.12

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY NUMBER OF YEARS AS PRINCIPAL AND EVER WORKED IN ANOTHER SCHOOL SYSTEM

Orientation: Ever worked in another school system	Number of Years as Principal		Percent Difference
	1-5 years	6 or more years	
NO (Local)	58% (87)	50% (97)	- 8%
YES (Cosmopolitan)	54% (101)	29% (75)	-25%

Similar relationships emerge from a consideration of the percent of principals with high innovation rates by tenure and prior appointments (Table VIII.13). Again, although both prior appointments and tenure are independently related to innovation, it is tenure which has the more significant effects

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[1] We assume (because there were only three principals under the age of 35) that the principals have all had some prior experience, i.e., that they have not just completed their training.

TABLE VIII.13

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY NUMBER OF YEARS AS PRINCIPAL AND PRIOR APPOINTMENTS

Prior Appointments		Number of Years as Principal		Percent Difference
		1-5 years	6 or more years	
Complete Insiders: School Only		50% (14)	26% (19)	-24%
Mixed	School and System	58% (63)	38% (50)	-20%
	System Only	58% (99)	45% (97)	13%

(mean difference of 19 vs. 13.5). Reading down the table we can see that there is not much difference in innovation rates among those with a short tenure -- the range is from 50% high rates to 58% high rates -- as classified by prior appointments. New principals innovate regardless of the narrowness of their prior experience. Among those with a longer period of tenure, however, prior appointments are more relevant. Presumably the complete insiders operate under the constraints discussed above.

There is another consideration which may be relevant here, that is, future prospects.. For principals who have previously worked in other schools in the school system the appointment to the position of principal may represent a horizontal as well as a vertical promotion. The career of urban school teachers includes a horizontal component as well as a vertical one: there is the movement from low status slum schools to higher status (probably White) schools as well as movement from teacher to department chairman to administrator.[1] Similarly, for administrators we assume there are promotional transfers to better schools. Those principals who are employed by a single school within the system have not been rewarded by such transfers, and if they have already served as principal for a long time (at least six years), they may no longer be in the competition for better positions (either horizontal or vertical). Without the incentive of better future employment, they adjust to the situation and manage affairs as easily as possible: such adjustment probably precludes the adoption of innovations which disrupt the accommodations of various organization members. They no longer have to prove themselves and if they see themselves as being in a "dead-end" position, they probably want to run things with as little disruption as possible.

Education and Training

Among the personal-professional variables which might be important in determining the rate at which a principal innovates (e.g., home community, parents' SES) the only one which is actually related to innovation rates within our sample is the type of education the principal received as an undergraduate.[2] The principals are almost equally divided among those who received their training in a teachers' college or teaching unit of a university and those who had a liberal arts education. The former group have a slightly higher rate of adoption than the latter (51% high rates vs. 44% high rates). There is no difference in the discernment with which innovations are selected by the two groups (Table VIII.14).

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[1] Becker, op. cit.

[2] We did not examine either sex differences or differences in the educational attainments of the principals because there are: a) only 22 women out of the entire sample of 377, and b) only 16 principals who did not have at least an M.A. degree at the time of the study and only 52 who had significantly more education. (Cf. Discussion of Principals in Appendix F.)

TABLE VIII.14

RATE OF ADOPTION AND MEAN PROPORTION OF HIGH QUALITY INNOVATIONS ADOPTED BY UNDERGRADUATE TRAINING

Undergraduate Training	Rate of Innovation				Mean Proportion of High Quality Innovations Adopted	(N)
	Low	Medium	High			
Teacher Training	24%	30%	46%	(100%)	42.6	(176)
Liberal Arts	37%	32%	31%	(100%)	43.2	(181)

The type of training a principal has received is also related to his age. Fifty-seven percent of the younger principals received teacher training versus forty percent of the older principals, suggesting that school systems are more likely to favor the appointment to administrative positions of teachers' college graduates now than they were in the past. If we look at the percent of principals with high innovation rates by training while controlling for age (Table VIII.15), we find that among the younger principals type of training is essentially irrelevant. However, among the older principals, a teachers' college training seems to have a continuing effect, engendering a higher acceptance of, or tolerance for. innovation. This contradicts the liberal arts bias of most observers of education. Perhaps the early commitment to education as a career demonstrated by acquiring teacher training rather than a general liberal arts education has persistent effects. These principals may be more likely to subscribe to professional journals and retain contacts with other educators. A more complete sense of themselves as educators engenders a greater commitment

TABLE VIII.15

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY UNDERGRADUATE TRAINING AND AGE

	Principal's Age	
Undergraduate Training	29-55	56 or older
Teacher Training	54% (104)	47% (72)
Liberal Arts	58% (77)	34% (104)

to acting in an innovative manner. These hypotheses, interesting as they may be, cannot allow us to overlook the fact that the strongest relationship in the table is that of age and innovation, not training and innovation. No matter where they acquired their undergraduate education, the younger principals are more innovative than the older ones.

Similar findings emerge from our analysis of length of tenure, undergraduate training and innovation (Table VIII.16). Again, the most significant relationship is that between length of tenure and innovation, a relationship which remains when we control for type of training. And it is primarily among the principals with lengthier tenure that type of education has an independent -- though minor -- effect on innovation rates. In summarizing, then, we can conclude that while a teachers' college education may have a slight, positive effect on a principal's attitude toward the adoption of innovations, this is primarily true of the older, more established principals. Moreover, type of training is a far less important determinant of innovation than are other career variables.

TABLE VIII.16

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES
(5 OR MORE) BY UNDERGRADUATE TRAINING
AND NUMBER OF YEARS AS PRINCIPAL

	Number of Years as Principal	
Undergraduate Training	1-5 years	6 or more years
Teacher Training	58% (95)	43% (81)
Liberal Arts	51% (92)	37% (90)

Employment Context

Having identified several background variables which have an effect on the rate at which the principals of schools innovate, we now want to look more closely at the context in which they work. As we noted in Chapter III, school systems which are more decentralized are, on the whole, more innovative than school systems in which most of the decisions are made at the central administrative level.[1] We now want to see what effect this has on the rate at which the principals within these school systems innovate and whether the two major relevant variables -- tenure and age -- have an impact when we control for school system structure. We will then turn to an examination of the different types of schools in which the principals are situated and see whether there is a tendency for one type of school to select a specific type of principal and, if so, whether this fact is more important than his own personal or professional inclinations.

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[1] See discussion above, Chapter III, p. 78 ff.

Type of School System

The degree to which a school system is decentralized is related to the rate at which the principal innovates: 41% of the principals in centralized school systems have high innovation rates in contrast to 56% of those in decentralized school systems. This is not surprising given the fact that, on the whole, decentralized school systems are more innovative. More interesting to note is that when we control for the degree to which the school system is decentralized, both length of tenure and age remain relevant to a principal's action (Table VIII.17A and 17B). Thus, although it is more likely that a principal will be able to innovate in a decentralized than a highly centralized school system, it is the young in both types of school systems and those with shorter tenure in both types of school systems who are the most innovative principals. The older, more experienced principals have had more of an opportunity to work with the administrators of the school system than the younger ones. This familiarity does not help them with respect to innovation in either the centralized or the decentralized school systems. If the system is highly centralized less innovation occurs and it is not "know-how" with respect to the central bureaucracy that occasions exceptions but personal commitment and/or ambition.

Type of School (Racial Composition)

If we look at the percent of principals with high innovation rates within type of school by racial composition, we find, naturally, that the distribution looks almost exactly as it does for the percent of schools with high innovation rates within the same categories. Thus we find that the major difference is between principals in White Integrated schools and all other principals: only 33% of the former have high innovation rates versus approx-

TABLE VIII.17

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY DECENTRALIZATION AND AGE (A) AND NUMBER OF YEARS AS PRINCIPAL (B)

A: Percent of Principals with High Innovation Rates (5 or more) by Decentralization and Age

	Decentralization	
Principal's Age	HIGH (4.7-7.8)	LOW (2.8-4.6)
29-55	64% (86)	48% (90)
56 or older	48% (103)	33% (82)

B: Percent of Principals with High Innovation Rates (5 or more) by Decentralization and Number of Years as Principal

	Decentralization	
Number of Years as Principal	HIGH (4.7-7.8)	LOW (2.8-4.6)
1-5 years	63% (99)	45% (77)
6 or more years	49% (86)	34% (99)

imately 50% of those in each of the other three types of schools.

One possible explanation for this finding is that White Integrated schools are more likely than other schools to be in highly centralized school systems. However, if we look at decentralization by type of school we see that it is the Black schools which are least likely to be in decentralized systems (Table VIII.18), and that even when we control for the degree to which the school system as a whole is decentralized, principals in White Integrated schools are the least likely to have a high rate of innovation (Table VIII.19). The low rate of innovation in these schools is not solely the result of the general constraints in a centralized school system.

TABLE VIII.18

PERCENT OF EACH TYPE OF SCHOOL (BY RACIAL COMPOSITION) IN HIGH DECENTRALIZATION SCHOOL SYSTEMS

Racial Composition	Percent of Schools in High Decentralization (4.8-7.8) School Systems	N
WHITE	54%	216
WHITE INTEGRATED	42%	65
BLACK INTEGRATED	42%	26
BLACK	36%	59

TABLE VIII.19

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY TYPE OF SCHOOL AND SCHOOL SYSTEM DECENTRALIZATION

	Decentralization	
Racial Composition	HIGH (4.7-7.8)	LOW (2.8-4.6)
WHITE	57% (94)	44% (115)
WHITE INTEGRATED	44% (27)	24% (34)
BLACK INTEGRATED	54% (11)	53% (15)
BLACK	63% (19)	43% (35)

Another possible explanation for the fact that principals are unlikely to be innovative when serving in White Integrated schools is that these schools select as principals those with personal-professional characteristics which are not associated with innovative behavior. When we look at two significant characteristics of principals employed in each of the four types of schools, however, we find that this is not the case.[1] The White Integrated schools are no more likely to have serving in them older and more experienced principals than are the White schools (Table VIII.20). (Presumably principals prefer the White and White Integrated schools and those who do not move into the central administrative hierarchy are likely to serve out the remainder of their careers in such schools.)

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[1] There is no difference among the four types of schools as defined by racial composition of the student body in the extent to which the principals who work in them are insiders or outsiders, or have ever worked in another school system. Therefore we do not feel that it is important to control for these factors in this portion of our analysis.

TABLE VIII.20

AGE OF PRINCIPALS (A) AND NUMBER OF YEARS AS PRINCIPAL (B) BY TYPE OF SCHOOL (RACIAL COMPOSITION)

Racial Composition	A Percent of Principals Under 5 Years	N	B Percent of Principals Serving 5 Years of Less	N
WHITE	50%	216	53%	209
WHITE INTEGRATED	51%	65	46%	61
BLACK INTEGRATED	61%	26	34%	26
BLACK	70%	59	36%	86

In any case, when we examine the percentage of principals with high innovation rates while controlling for the age of the principal, we can see that the impact of age is more important in White and White Integrated schools (differences of 20% and 29% respectively) than in the Black Integrated or Black schools (differences of 6% and 0% respectively) (Table VIII.21). The conservatism associated with the older principals is evident in the White schools; in the other two types of schools this is not the case. The pressures to introduce changes in the Black and Black Integrated schools overcame the personal biases of the principals. This is very similar to our finding that the more highly experienced teachers were more able to put up resistance to innovation

TABLE VIII.21

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY AGE AND TYPE OF SCHOOL (RACIAL COMPOSITION)

	Principal's Age	
Racial Composition	29-55	56 or older
WHITE	61% (102)	41% (107)
WHITE INTEGRATED	48% (29)	19% (32)
BLACK INTEGRATED	56% (16)	50% (10)
BLACK	50% (36)	50% (18)

in the White and White Integrated schools than in the other two types of schools. In the White schools innovation is an outgrowth of personal inclinations and more natural processes; in the Black schools it is more likely to be imposed from above.

This argument may be undercut by the finding that when we examine the percent of principals with high innovation rates by tenure within each of the four types of schools we find that the tenure of the principal has independent effects on innovation in both the White and the Black schools (Table VIII.22). If the personal and professional characteristics of the teaching and administrative staff are given more play in the White schools, why is tenure so crucial in the Black schools? One possible explanation is that the length of the appointment of a principal in a single school is, unlike his age, subject to central office determination. If there was a rush to introduce innovations in the Black and Black Integrated schools the central administration might have changed the leadership in these schools, operating on the assumption that a new principal could carry through such a program with less trouble than a more established one. And in fact, in those Black schools where the principals were allowed to remain, the rate of innovation is quite low.

TABLE VIII.22

PERCENT OF PRINCIPALS WITH HIGH INNOVATION RATES (5 OR MORE) BY NUMBER OF YEARS AS PRINCIPAL AND TYPE OF SCHOOL (RACIAL COMPOSITION)

	Number of Years as Principal	
Racial Composition	1-5 years	6 or more years
WHITE	62% (99)	41% (110)
WHITE INTEGRATED	36% (33)	29% (28)
BLACK INTEGRATED	47% (17)	* (9)
BLACK	57% (64)	37% (22)

*There are too few cases on which to base a percentage.

We draw several conclusions from our findings in this chapter. First, the personal or professional characteristics of principals can be important determinants of the rate at which they innovate. Prior appointments, degree of cosmopolitanism, age and tenure are all related to innovation rates. The most innovative principals are those who are eager to prove themselves at the start of their professional career; the least innovative principals are those who have remained in a single position for a long time and operate under personal and structural constraints. At the same time, the context of employment is also important. The effects of school system decentralization are as significant as the effects of either age or tenure, and if the school system is highly centralized, young, ambitious principals are more constrained than they would be in a decentralized school system. Furthermore, the type of school in which a principal is working (here defined only by racial composition) is also important. If the central administration of the school system is not interested in providing the students with new techniques, the school will not be innovative, no matter what type of principal is employed there. The career of the principal as well as his particular situation define the rate at which he will innovate.

CHAPTER IX

CONCLUSION

This final chapter of our report on the adoption of innovation in urban education is divided into two sections. In the first we review some of the basic findings of our research and formulate our ideas about the determinants of change in the population and, at the time, under investigation. In the second part of the chapter we discuss some of the questions raised by our research and suggest additional studies to pursue the hypotheses developed here.

SUMMARY OF MAJOR FINDINGS

The broadest question underlying this research is what determines change in educational institutions. Of course, as operationalized, the question is much narrower. We did not investigate all types of change but rather innovation, a species of the genus "change" defined, as suggested by Matthew Miles, as "a deliberate, novel, specific change which is thought to be more efficacious in accomplishing the goals of a system." Furthermore, we did not consider all possible innovations but limited our analysis to seventeen items included in a survey of urban schools during the 1968-69 school year.

A further refinement of the aim of the research is that we only examine one end of the process of selecting and implementing an innovation, that is how many innovations were currently in use in the schools. Thus we do not look at innovation as a process; that is, we do not consider how many innovations were considered but not implemented; who sponsored the innovations; how conflict pertaining to the adoption of any specific innovation was handled.

There is a historical context which further defines the issues in this study and gives rise to a major concern. The data on which the research is based was collected during (and with reference to) the 1968-69 school year, at the end of a decade during which two important, interrelated developments in education occurred. First, during this period there was an increasing public awareness of the problems of education in urban schools. The 1960's were times of turmoil -- boycotts, strikes, protests -- and criticism, particularly from Black communities which were pressing for equal education. Second, there was during this time, a boost for the development of educational innovations from the federal government -- as well as from other sources -- and a consequent rapid growth of research and development centers, information clearinghouses, regional laboratories and locally and regionally based dissemination projects, all with the aim of educational self-renewal and progress through the infusion of new ideas and innovations based on research knowledge. The combination of the spur to innovation and the intense pressures for change make it extremely likely that the changes that actually occurred were not well-thought out, that faddism, or the adoption of widely publicized but low quality innovations, became a dominant style of change.

We began by looking at the responses obtained from a survey of a national panel on secondary education which asked the members to rate the innovations in terms of educational worth, how difficult each would be to implement, and the probability that the innovations, when implemented, take on a form resembling the original design. An analysis of these responses offers evidence that the adoption of innovations in schools often serves a social function, a function unrelated to the precise attributes of the innovations themselves. Although it is true that the most frequently implemented innovations are those which are of high educational value, this is not uniformly the case. Several innovations which are implemented in a high proportion of urban schools are of low educational value and their frequent use cannot be accounted for by the fact that they are cheap or easy to implement. Innovations which are costly and widely publicized in the media may be selected for just these reasons -- not because they are thought to have any intrinsic value, but because, in a time of public criticism and attention, the adoption of such innovations is a means by which school officials can make visible to the public that they are, in fact, introducing changes.

Our consideration of the institutions adopting innovations began with an examination of the school systems as single units. Although there are differences within the cities in the number of innovations adopted in the schools -- i.e., for instance, not all schools in New York City or Phoenix adopt the same number of innovations -- there are also differences between the cities in the average rate of innovation. The range begins with an average of almost nine innovations in the schools in the most innovative cities -- Miami and Minneapolis -- and drops to a low of approximately two innovations in the schools in Buffalo and Milwaukee.

A number of variables which one would expect to determine the rate of innovations in a city school system ultimately prove to be unimportant. The size of the school system, median family income, percent of the population below poverty level, percent of the population that has graduated from high school, per pupil expenditures, teachers' salaries -- all of these variables are related to innovation when examined alone. However, when the racial composition of the city population is introduced as a control variable, these relationships are not sustained. Cities with more than a ten percent Black population house school systems which are considerably less innovative than the school systems in cities with very small Black populations. In considering this finding our first hypothesis was that it was because innovations had been distributed unequally to Black and white students (with the white students receiving many more) and that this discrimination accounted for the overall lower rate of innovation in those cities with a sizeable Black population. This hypothesis is false and, in fact, the answer is more complex. Before explaining further, we want to discuss two additional conclusions which derive from the analysis of school systems.

First, decentralization of a city school system -- when measured as actual decentralization of authority and not simply an ecological arrangement of administrative offices -- is positively related to innovation. If the decision-making power rests in the hands of the individual building principal rather than at the central office level, more innovation takes place. Furthermore, this is true of all cities, regardless of racial composition. If changes have to be approved by or authorized from above, the rate at which change occurs will be slow.

Second, much of the research in the past has focussed on the capacity of the superintendent to introduce change: he stands at the top of the administrative hierarchy and can determine the direction of the system. Some investigators — notably Carlson -- argue that it is only those superintendents who are imported from outside the school system who can introduce meaningful change: they operate under fewer constraints, are more cosmopolitan in outlook, and may, in fact, have a mandate to bring about change. We also find this to be the case. Superintendents who are outsiders run more innovative school systems. However, this is only true when there is a small Black population. Simply importing a new superintendent does not ensure innovation in a racially troubled city.

From this preliminary investigation of the determinants of innovation at the city level we turned to an intensive analysis of the individual schools, anticipating that, as a rule, the higher the proportion of Black students enrolled in a school, the fewer innovations there would be. This was not the case. We classified schools into four groups according to the proportion of students enrolled who are Black: White schools -- schools with less than 20% Black enrollment; White Integrated schools -- between 20 and 50% Black enrollment; Black Integrated schools -- between 50 and 80% Black enrollment; and Black schools -- over 80% Black. Surprisingly, there is no difference between these four types of schools in the rate at which they adopt innovations, with one important exception: the White Integrated schools have considerably lower innovation rates than the other three types of schools.

This finding does not explain the difference in innovation rates between cities with smaller and larger Black populations: not all White Integrated schools are located in the more heavily Black cities and innovation rates for each type of school -- White schools included -- are lower in the more heavily Black cities than in the predominately white cities. The explanation must be that in the past -- before the pressures for change and the availability of money -- innovations were unevenly distributed: White schools received the necessary funds and implemented the products of educational technology; if there was a sizeable proportion of Black students enrolled less innovation took place. The efforts to rectify the more obvious inequalities and provide evidence thereof resulted in a sudden spurt of innovation in the predominately Black schools. The White schools in these cities were surpassed by the White schools in the less troubled cities. The legacy of negligence ultimately affected every part of the system. But the White Integrated schools were ignored: these schools are often located in ethnic neighborhoods, bordering on ghetto areas. No pressures for change emerged from these neighborhoods, in part, because the community may have felt that neglect was a small price to pay for maintaining a white dominance: attention might have brought with it bussing and integration. Also, parents in these communities -- the silent majority -- had less access to those in power. While the higher SES white parents had links with the central administration, and the Black community had its spokesmen, perhaps no one served in such a capacity in these communities.

This contention that innovation in the White schools represents the result of many years' increment, whereas innovation in the Black Integrated and Black schools represents a sudden shift in policy in response to pressures and new funding, is supported by two additional findings. First, the overall quality of innovations adopted in the Black schools is very low: the process of innovation was motivated by the need to provide evidence that change was taking place: thus costly, high visibility, high publicity innovations were adopted instead of high quality ones. Second, the expected relationship between the socio-economic status of the students and the number of innovations adopted appears only among the White schools: among these schools those with higher SES students enrolled are more innovative than those with less wealthy student enrollments. Among the Integrated and Black schools, the reverse is true: there is more innovation in the poorer ghetto schools, the schools about which there was the most criticism and concern.

These findings about the relationship between innovation and the racial composition of the schools surprised us and necessitated a shift in orientation and future analysis. It was a while before it became clear that if, in fact, the manner in which and the pace at which innovations were introduced in the Black Integrated and Black schools was different than the manner and pace at which they were implemented in the White schools, different school characteristics might be related to innovation among the former group than among the latter group of schools. The basic question about the determinants of innovation had to be subdivided: first, what school characteristics are related to innovation in all schools; and second, two more questions -- what variables are important in the Integrated and Black schools, and how do these differ (and for what reasons) from the variables that are important in the White schools.

The response to the first question is easier and will be reviewed briefly here. First, the academic quality of the students enrolled in a school is highly related to the rate at which innovations are adopted. Schools with average students -- based on the principal's estimate -- are more innovative than schools with below or above average students. This is true in all types of schools as classified by the racial composition of the student body. The introduction of an innovation always involves some element of risk: the innovation may, in fact, be detrimental to learning. School systems do not take risks with the above average students whose acceptance in choice colleges is crucial to the prestige of the system. The low rate of adoption of innovation in schools attended by below average students may be because administrators have written these students off -- they see little possibility for changing performance and therefore do not attempt anything novel. This pattern of adoption of innovations occurring most frequently among schools with average student bodies has a corollary in the tendency of the innovation of an academic subject to be introduced into schools of intermediate prestige, and then to be adopted by imitators at adjacent prestige levels.

The second organizational characteristic which is related to innovation in all schools is complexity. Complexity -- or horizontal differentiation -- entails the employment of a wide range of staff members who can bring a variety of sources of information to bear; this facilitates the awareness of knowledge of innovations. At the same time there is evidence in our data that the highly complex schools are less likely to adopt those innovations which are difficult to implement. Complexity engenders the adoption of innovation, but it makes careful selection crucial.

Among the White schools alone, the characteristics of the teaching staff -- its organization, relationship with the principal, experience and training -- are additional important determinants of innovation. White schools are essentially stable organizations: innovation occurs gradually and through careful planning. It is an integral part of these schools and, we suggest, because the process is essentially organic, the teaching staff gains a louder voice: a highly experienced staff averse to the introduction of changes which will require modification of their teaching techniques can resist them; a well-trained staff jealous of its professional status will forestall the adoption of innovations which threaten them. When the staff is unchanging, when there is a low rate of turnover, there is little innovation. Stability can lead to conservatism.

The teaching staff has little or no voice in the Integrated and Black schools. The pressures impinging on the administration of these schools, the rush to provide evidence that change was taking place, precluded the "luxury" of accommodating, or mollifying the staff. A completely different set of factors determine which of the Black and Integrated schools adopt a high number of innovations: Innovations were introduced not necessarily in those schools which were most in need of change, but in those in which there was first, the most parent involvement (or pressure for change), and second, in those in which, presumably, there was the greatest chance for success; that is, among the Integrated and Black schools it is those with the best physical facilities, the highest teacher-student ratios, the highest student morale that are the most innovative.

In general there is evidence that organizations under intense pressure for change will adopt innovations in a different manner than organizations in which change is a slower, more organic process. In the former case change is possible only if there are relatively few obstacles: if the facilities are adequate and the morale is high. But the changes may not stick. If in fact, it is motivated by outside pressure rather than an internal realization of the need for change, then the innovations adopted are likely to be selected to satisfy public demands rather than the educational needs of the clients. Also, if the necessary pre-adoption steps have not been taken -- such as making sure that various staff members have agreed to participate -- at a later point in time the effects of the period may dissipate. This might be particularly true in those schools in which change was imposed on an otherwise inadequate structure, as for instance, when innovations were introduced in lieu of significant program changes or improvements in the facilities.

In those schools in which change is a slower, more organic process, the obstacles mentioned above (facilities, morale) are more easily overcome if the incentive to change exists at all. However, the participants become more important. Teachers, whose voices are not heard in the intense climate of rapid change, are heard here. A reluctant administration (e.g., one headed by an elderly, tenured principal) will not move readily. But the changes that take place may be more likely to stick. Since the lack of pressure seems to be associated with decentralized administration, more voices may participate in the decision. The changes are not imposed from the top down and once approved, they are likely to remain and become part of the normal operating procedure. At the same time, there is always the possibility of stagnation: so many people can block change and so much is at stake.

SUGGESTIONS FOR FURTHER RESEARCH

This research, in fact, raises almost as many questions as it answers. First, there is the question about the generalizeability of our conclusions above. We describe change in schools during a specific period as having resulted in a different style and pace of adoption in different schools as measured by the student body and the external pressures to change. The question is whether our conclusions would apply to any institution under pressure to change and/or whether they would apply only (if at all) to organizations which are publically controlled and highly visible in and of themselves. City hospitals, for instance, when under public scrutiny might demonstrate the same style of adoption of innovations as we discussed for the Black and Integrated schools. But would prisons or other organizations which are less accessible to public scrutiny? Clearly, there is room for further analysis along these lines.

A second major possibility for future research is a follow-up study. Since much of our argument is based on the idea that there was, in fact, a period during which money was available and pressures were present, it would be worthwhile to examine what happened after either and/or both of these factors disappeared. Federal money is not as easily obtained now as it was in the past; the concern in cities is inflation and unemployment -- not the quality of education. What is going on in the schools in these large cities now? Have the innovations remained or have they been phased out? Did any meaningful change takes place?

Third, there are questions about the White Integrated schools. These schools almost uniformly had the lowest rate of innovation, the only exceptions being when morale or parent pressure was high. The organizational features which were related to innovation among these schools are not so clearly defined as for the White, Black Integrated and Black schools. Sometimes they operated like the Black schools; sometimes like the White. An investigation of the reasons behind the low rate of change and the forces operating in these schools would add much to our understanding of institutions serving blue-collar white communities.

Moving away from the concern with the overall change process and the schools as classified by racial composition, there are numerous specific questions to be answered, many of which would require a case study analysis of process. For instance, there is a relation between teacher morale and innovation. Why? What happens in schools in which there is high teacher dissatisfaction that relates to the manner in which change takes place? Similarly, there are unanswered questions about how organizational complexity operates as a push to innovation, or how poor physical facilities impede the adoption of innovations. This type of question -- many of which are indicated in the text -- needs further study.

APPENDIX A

NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS QUESTIONNAIRES

NASSP LARGE CITY SCHOOL STUDY

Section A: General School Information

Name of School ______________________________

School Address ______________________________
(Street)

____
(City) (State) (Zip)

Principal's Name ______________________________

(Do not write in spaces 1-12)

School Code Number ___ ___ ___ ___ ___ ___
1-2 3-4 5-6 7-8 9-10 11-12

13. Grade levels in school program

Three-year senior high: grades 10-12 ___13.1
Four-year high school: grades 9-12 ___13.2
Six-year secondary school: grades 7-12 ___13.3
Two-year high school: grades 11-12 ___13.4
Other: specify ______________________ ___13.5

14. Average daily attendance as a percentage of stated legal daily enrollment is

Less than 50% ___14.1
51 - 60% ___14.2
61 - 70% ___14.3
71 - 80% ___14.4
81 - 90% ___14.5
91 - 95% ___14.6
96 - 100% ___14.7

15. Student enrollment is based upon

a definite attendance area that is geographically contiguous ___15.1
an attendance area that is NOT geographically contiguous ___15.2
competitive examination or other measure of achievement/ability ___15.3
an attendance area but with some open-enrollment options from other areas ___15.4
city-wide open-enrollment policy ___15.5
Other: specify ______________________________ ___15.6

16. How many different school sessions are there during the school day in terms of the different groups of students that enter and leave the school facilities?

Only one __16.1
2 sessions __16.2
3 sessions __16.3
4 sessions __16.4
5 or more __16.5

17. How many different full teaching periods are there in a school day? (Exclude short periods used for administrative purposes.)

5 or fewer full periods __17.1
6 full periods __17.2
7 full periods __17.3
8 full periods __17.4
9 full periods __17.5
10 full periods __17.6
11 full periods __17.7
12 full periods __17.8
13 or more periods __17.9

18. In addition to the diploma given at graduation, does your school present each student with a durable record of the program of studies pursued at your school and the grades/marks obtained?

Yes __18.1
No __18.2

Section D: General Personnel Information

8-10. The number of full-time certificated or credentialed* staff members on the school site is ______ 8-10

11. Also, please check the appropriate category representing the above figure.

50 or fewer	__11.1
51 - 70	__11.2
71 - 90	__11.3
91 - 110	__11.4
111 - 130	__11.5
131 - 150	__11.6
151 - 170	__11.7
171 - 190	__11.8
191 or more	__11.9

12-16. What percentage of the certified or credentialed staff, including administrators, have the following collegiate preparation? Please circle the proper numeral.

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
Less than a Bachelor's Degree	1	2	3	4	5	6	7	8	9	12.__
Only a Bachelor's Degree	1	2	3	4	5	6	7	8	9	13.__
Master's Degree or Equivalent	1	2	3	4	5	6	7	8	9	14.__
60-Point Degree, Diploma or Equivalent	1	2	3	4	5	6	7	8	9	15.__
Doctorate: Earned or Honorary	1	2	3	4	5	6	7	8	9	16.__

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*Certified or credentialed personnel includes persons with special training appropriate to stated expected competencies and does not include para-professionals, teacher aides, clerical assistants, lay readers or other persons who may not be under contract, are not assigned a specific group of students and are not held directly accountable by administrators for the education of youth.

17. The percentage of certificated staff members beginning their first year of professional service in this school, regardless of previous professional service in other schools, is

0 - 5%	__17.1
6 - 10%	__17.2
11 - 15%	__17.3
16 - 20%	__17.4
21 - 25%	__17.5
26 - 30%	__17.6
31 - 35%	__17.7
36 - 40%	__17.8
41% or more	__17.9

18-24. The percentage of certificated staff members, including administrators, that is

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
American Indian	1	2	3	4	5	6	7	8	9	18.__
Caucasian	1	2	3	4	5	6	7	8	9	19.__
Negro	1	2	3	4	5	6	7	8	9	20.__
Oriental	1	2	3	4	5	6	7	8	9	21.__
Puerto Rican	1	2	3	4	5	6	7	8	9	22.__
Spanish American	1	2	3	4	5	6	7	8	9	23.__
Other Specify________________________	1	2	3	4	5	6	7	8	9	24.__

*25. The number of fulltime, on site, contract and credentialed instructional support personnel, such as curriculum coordinators, assistant principals for curriculum, department chairman, librarians, and audio-visual specialists is

One or two	__25.1
Three or four	__25.2
Five or six	__25.3
Seven or eight	__25.4
Nine or ten	__25.5
Eleven or twelve	__25.6
Thirteen or fourteen	__25.7
Fifteen to twenty	__25.8
Twenty-one or more	__25.9

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*Special off-site support personnel who work from the central system offices will be included in other aspects of the study. Include only on-site personnel in items 25 and 26.

*26. The number of part-time, on site, contract and credentialed instructional support personnel, assigned to assist teachers, such as helping teachers, part-time department heads, is

One or two __26.1
Three or four __26.2
Five or six __26.3
Seven or eight __26.4
Nine or ten __26.5
Eleven or twelve __26.6
Thirteen or fourteen __26.7
Fifteen to twenty __26.8
Twenty-one or more __26.9

27-32. What percentage of certificated staff members with a special secondary credential, such as designated services credential, pupil personnel guidance, administrative, are in the following categories representing professional services in this school regardless of previous experience in other schools?

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
First Year	1	2	3	4	5	6	7	8	9	27.__
Second Year	1	2	3	4	5	6	7	8	9	28.__
Third Year	1	2	3	4	5	6	7	8	9	29.__
Fourth or Fifth Year	1	2	3	4	5	6	7	8	9	30.__
Sixth to Tenth Year	1	2	3	4	5	6	7	8	9	31.__
Eleventh Year or More	1	2	3	4	5	6	7	8	9	32.__

33. To what extent is the present staff, including teachers and all other certificated personnel, sufficient in number to provide the current student body educational experiences appropriate to the implementation of the school curriculum?

Present number is greatly adequate __33.1
Present number is inadequate __33.2
Present number is adequate __33.3
Present number is more than adequate __33.4

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*Special off-site support personnel who work from the central system offices will be included in other aspects of the study. Include only on-site personnel in items 25 and 26.

34. If the present certificated staff is insufficient in number to implement the school curriculum appropriate to the current student body, what percentage increase do you think would be reasonable and appropriate?

0 - 5% __34.1
6 - 10% __34.2
11 - 15% __34.3
16 - 20% __34.4
21 - 25% __34.5
26 - 30% __34.6
31% or more __34.7

35. How many different adult paraprofessionals (aides, clerical, readers, liaison, etc.) are employed to work directly with your school?

0 - 10 __35.1
11 - 20 __35.2
21 - 30 __35.3
31 - 40 __35.4
41 - 50 __35.5
51 - 60 __35.6
61 - 70 __35.7
71 or more __35.8

36. Assuming a 40 hour work week, how many full-time equivalent positions are represented in the hours allocated to paraprofessionals?

0 - 5 __36.1
6 - 10 __36.2
11 - 15 __36.3
16 - 20 __36.4
21 - 25 __36.5
26 - 30 __36.6
31 or more __36.7

Section C: Teaching Personnel

37. The ratio of classroom teachers to students is

1 teacher to 20 students or fewer __37.1
1:21 - 1:25 __37.2
1:26 - 1:30 __37.3
1:31 - 1:35 __37.4
1:36 - 1:40 __37.5
1:41 or more students __37.6

38-43. The percentage of all teachers with a standard or regular credential or certificate who are

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
First year teachers	1	2	3	4	5	6	7	8	9	38._
Second year teachers	1	2	3	4	5	6	7	8	9	39._
Third year teachers	1	2	3	4	5	6	7	8	9	40._
Fourth or fifth year	1	2	3	4	5	6	7	8	9	41._
Sixth to tenth year	1	2	3	4	5	6	7	8	9	42._
Eleventh year or more	1	2	3	4	5	6	7	8	9	43._

44-49. The percentage of all teachers with a provisional or emergency credential or certificate who are

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
First year teachers	1	2	3	4	5	6	7	8	9	44._
Second year teachers	1	2	3	4	5	6	7	8	9	45._
Third year teachers	1	2	3	4	5	6	7	8	9	46._
Fourth or fifth year	1	2	3	4	5	6	7	8	9	47._
Sixth to tenth year	1	2	3	4	5	6	7	8	9	48._
Eleventh year or more	1	2	3	4	5	6	7	8	9	49._

50-55. The percentage of all teachers with the following teaching experience, including the current year and all experience in other schools and systems is

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
First year teachers	1	2	3	4	5	6	7	8	9	50._
Second year teachers	1	2	3	4	5	6	7	8	9	51._
Third year teachers	1	2	3	4	5	6	7	8	9	52._
Fourth or fifth year	1	2	3	4	5	6	7	8	9	53._
Sixth to tenth year	1	2	3	4	5	6	7	8	9	54._
Eleventh year or more	1	2	3	4	5	6	7	8	9	55._

56. The percentage of all teachers assigned to teach outside their major or minor field is

0 - 5%	__56.1
6 - 10%	__56.2
11 - 15%	__56.3
16 - 20%	__56.4
21 - 25%	__56.5
26 - 30%	__56.6
31% or more	__56.7

57. The average yearly teacher turnover is

0 - 5%	__57.1
6 - 10%	__57.2
11 - 15%	__57.3
16 - 20%	__57.4
21 - 25%	__57.5
26 - 30%	__57.6
31% or more	__57.7

58. To what extent is teacher dissatisfaction or unrest, instead of factors such as family, health or further education, reflected in the yearly turnover of teachers?

Little, if at all	__58.1
Somewhat, but not major	__58.2
A major factor	__58.3

59. The percentage of all teachers who have less than a full schedule of classes in order to devote part-time to student affairs, such as guidance functions, control, attendance, etc., is

0 - 5%	__59.1
6 - 10%	__59.2
11 - 15%	__59.3
16 - 20%	__59.4
21 - 25%	__59.5
26 - 30%	__59.6
31% or more	__59.7

60. The percentage of all teachers who have a full schedule of classes, but receive extra-compensation for devoting extra time to student affairs, such as guidance functions, control, attendance, etc., is

0 - 5%	__60.1
6 - 10%	__60.2
11 - 15%	__60.3
16 - 20%	__60.4
21 - 25%	__60.5
26 - 30%	__60.6
31% or more	__60.7

Section D: Administration-Supervision

61. How would you characterize your school on the basis of the socioeconomic conditions of the students enrolled?

An upper-middle class school __61.1
A "common man" or lower-middle and upper-working class school __61.2
A manual working class school __61.3
A cross-sectional school, representative of your whole city population __61.4

62-66. Which one or more of the following descriptions are applicable to the situation in your school?

Maintaining order and safety is a major problem and requires a large investment of staff time __62.1
We have no more than the average problem in maintaining order and safety __63.1
We have no problem maintaining order and safety and we do not devote much staff time to it __64.1
We need and use special assistance (police, plain clothesmen, etc.) to maintain order and safety __65.1
We have requested but have not received additional assistance for maintaining order and safety __66.1

67-68. Has the practice of grouping by ability and/or achievement tended to increase or decrease in your school during the past five years? What do you expect in the next five years?

During the past five years, ability/achievement grouping has

increased __67.1
decreased __67.2
remained about the same __67.3
not been practiced __67.4

During the next five years, ability/achievement grouping probably will

increase __68.1
decrease __68.2
remain about the same __68.3
will not be practiced __68.4

69. What is the role of the principal and his administrative staff in the preparation of the budget as it relates to this school?

Nothing to do with it; prepared by the central office __69.1
Make recommendations; budget is prepared by central office __69.2
Plan, recommend and defend specific requests before final decisions are made __69.3

70. What is the role of the principal and his administrative staff in the selection of certified personnel?

Nothing to say; assignments are made by central office __70.1
Request staff allocation and accept-reject among the candidates recommended by central office __70.2
Request staff allocation, review personnel records, interview applicants and recommend for assignment the applicants considered qualified __70.3
Employ certified personnel without the direct assistance of the central office __70.4

71-76. With respect to the curriculum of your own school, what is your opinion concerning students' ability to select programs and courses? Please use the following code for responses.

1 = Strongly agree
2 = Agree
3 = Neither agree nor disagree
4 = Disagree
5 = Disagree strongly

	+ +	+	+ -	-	- -	
We should have fewer programs of study with their related and/or required sequence of courses	1	2	3	4	5	71.__
We should develop more programs of study to provide differentiated curriculums for students	1	2	3	4	5	72.__
Students should have a greater range of courses in the area of constants (required subjects)	1	2	3	4	5	73.__
Students should have fewer constants and more free electives	1	2	3	4	5	74.__
The number of different programs and the combination of constants and free electives within them is about what it ought to be	1	2	3	4	5	75.__
The programs of study with their constants and electives does not need modification, but options for independent or directed study should be more readily available for students	1	2	3	4	5	76.__

Section E: Student Personnel Services

8-9. The number of full-time counselors on the staff is ____ 8/9

10-11. The number of different part-time counselors is ____10/11

12-13. The full-time equivalency of all part-time counselors is ____12/13

14-15. The number of full-time counselors with proper credentials is ____14/15

16. The ratio of counselors to students is

One counselor per 199 or fewer students __16.1
1:200 - 299 __16.2
1:300 - 399 __16.3
1:400 - 499 __16.4
1:500 - 599 __16.5
1:600 - 699 __16.6
1:700 or more students __16.7

17-25. What practices do you think would most improve the effectiveness of the counseling program in your school?

Please use the following code for your responses.

1 = Very significant positive effect
2 = Significant positive effect
3 = Neither a positive nor a negative effect
4 = Significant negative effect
5 = Very significant negative effect

	+ +	+	+ -	-	- -	
To decrease the number of students per counselor	1	2	3	4	5	17.__
To provide additional clerical help	1	2	3	4	5	18.__
To have ONLY full-time counselors	1	2	3	4	5	19.__
To adjust salaries commensurate with work assignments	1	2	3	4	5	20.__
To assign counselors to families rather than to students	1	2	3	4	5	21.__
To assign more paraprofessionals for informal work with students	1	2	3	4	5	22.__
To incorporate personnel from other agencies in school program for on-site assistance	1	2	3	4	5	23.__
To allocate increased staff time to evening hours for closer home-school relations	1	2	3	4	5	24.__
Other______________________________	1	2	3	4	5	25.__

26. Does your school employ a full-time non-teaching nurse?

Yes	__26.1
No	__26.2

27. The average daily case load per person on the school nursing staff is

20 - 40	__27.1
41 - 60	__27.2
61 - 80	__27.3
81 - 100	__27.4
101 or more	__27.5

28-32. Specialists available to students as part of the student personnel program is

	Full-time on site	Part-time on site	On call or by referral	None	
Psychologist	1	2	3	4	28.__
Speech therapist	1	2	3	4	29.__
Audiometrist	1	2	3	4	30.__
Home counselor or social worker	1	2	3	4	31.__
Psychiatrist	1	2	3	4	32.__

33-35. What percentage of the parents/guardians of students are directly involved in at least one formal conference with a counselor sometime during the school year?

Students	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
Grade 10	1	2	3	4	5	6	7	8	9	33.__
Grade 11	1	2	3	4	5	6	7	8	9	34.__
Grade 12	1	2	3	4	5	6	7	8	9	35.__

36-39. What percentage of counseling time is devoted to the following activities?

	0-10%	11-20%	21-30%	31-40%	41-50%	51%	
Discipline	1	2	3	4	5	6	36.__
Educational guidance	1	2	3	4	5	6	37.__
Vocational guidance	1	2	3	4	5	6	38.__
Guidance-related clerical tasks	1	2	3	4	5	6	39.__

40-44. How many non-school employees representing other agencies meet with students in sessions arranged by the school to discuss career development, such as employment, continuing education, military service, etc.?

	1-5	6-10	11-15	16-20	21-25	26 or more	
4-year colleges	1	2	3	4	5	6	40.__
2-year colleges	1	2	3	4	5	6	41.__
military service	1	2	3	4	5	6	42.__
special training	1	2	3	4	5	6	43.__
business/industry	1	2	3	4	5	6	44.__

45. A graduate follow-up survey is conducted by your school

Not at all __45.1
First year after graduation only for all classes __45.2
First year after graduation only on a periodic basis __45.3
For more than one year for all classes __45.4
For more than one year for some classes __45.5
Yes, but some other pattern followed __45.6

46-52. Is the follwing information included in the follow-up survey of students?

	YES	NO
Number enrolled in 4-year colleges	__46.1	__46.2
Number enrolled in 2-year colleges	__47.1	__47.2
Number enrolled in special training	__48.1	__48.2
Number in military service	__49.1	__49.2
Number in non-military employment	__50.1	__50.2
Number married	__51.1	__51.2
Number not continuing education nor employed	__52.1	__52.2

Section F: Student Enrollment, Attendance and Records

8-14. The percentage of student population enrolled as of October 1, 1968 was

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
American Indian	1	2	3	4	5	6	7	8	9	8.__
Caucasian	1	2	3	4	5	6	7	8	9	9.__
Negro	1	2	3	4	5	6	7	8	9	10.__
Oriental	1	2	3	4	5	6	7	8	9	11.__
Puerto Rican	1	2	3	4	5	6	7	8	9	12.__
Spanish American	1	2	3	4	5	6	7	8	9	13.__
Other	1	2	3	4	5	6	7	8	9	14.__

Specify________________

15-21. The percentage of the student population enrolled in the 1960-61 school year was

	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81%+	
American Indian	1	2	3	4	5	6	7	8	9	15.__
Caucasian	1	2	3	4	5	6	7	8	9	16.__
Negro	1	2	3	4	5	6	7	8	9	17.__
Oriental	1	2	3	4	5	6	7	8	9	18.__
Puerto Rican	1	2	3	4	5	6	7	8	9	19.__
Spanish American	1	2	3	4	5	6	7	8	9	20.__
Other	1	2	3	4	5	6	7	8	9	21.__

Specify________________

22. The percentage of students in the class of 1968 that entered the first year of your school's program (grade 9 or 10) but transferred to another school is

0 - 5% __22.1
6 - 10% __22.2
11 - 15% __22.3
16 - 20% __22.4
21 - 25% __22.5
26 - 30% __22.6
31% or more __22.7

23. The percentage of students who enrolled at some time in the class of 1968 whom you later classified as dropouts is

0 - 5% __23.1
6 - 10% __23.2
11 - 15% __23.3
16 - 20% __23.4
21 - 25% __23.5
26 - 30% __23.6
31% or more __23.7

24. The percentage of seniors in the 1968 graduating class that completed one year or less of the secondary school program it your school is

0 - 5% __24.1
6 - 10% __24.2
11 - 15% __24.3
16 - 20% __24.4
21 - 25% __24.5
26 - 30% __24.6
31% or more __24.7

25. The percentage of an average entering class (grade 9 or 10) enrolled in courses assumed to be expected by 4-year colleges of students applying for freshman admissions is

0 - 10% __25.1
11 - 20% __25.2
21 - 30% __25.3
31 - 40% __25.4
41 - 50% __25.5
51 - 60% __25.6
61 - 70% __25.7
71% or more __25.8

26. The average absenteeism on a day preceding an extended vacation or holiday is

0 - 10% __26.1
11 - 15% __26.2
16 - 20% __26.3
21 - 25% __26.4
26% or more __26.5

27. The percentage of the student population properly described as being educationally gifted is

0 - 5% __27.1
6 - 10% __27.2
11 - 15% __27.3
16 - 20% __27.4
21 - 25% __27.5
26 - 30% __27.6
31% or more __27.7

28. The percentage of the student population certified or properly described as educable mentally retarded is

0 - 5% __28.1
6 - 10% __28.2
11 - 15% __28.3
16 - 20% __28.4
21 - 25% __28.5
26 - 30% __28.6
31% or more __28.7

29. The percentage of the student population that speaks English as a second language is

0 - 10% __29.1
11 - 20% __29.2
21 - 30% __29.3
31 - 40% __29.4
41 - 50% __29.5
51% or more __29.6

30. The percentage of the school population having physical disabilities requiring special medical and/or education attention is

0 - 5% __30.1
6 - 10% __30.2
11 - 15% __30.3
16 - 20% __30.4
21 - 25% __30.5
26% or more __30.6

31. The percentage of the entering class (grade 9 or 10) that would be considered seriously disadvantaged socioeconomically, using $2000 to $3000 annual income or comparable criteria, is

0 - 10% __31.1
11 - 20% __31.2
21 - 30% __31.3
31 - 40% __31.4
41 - 50% __31.5
51 - 60% __31.6
61 - 70% __31.7
71% or more __31.8

32. The percentage of the entering class (grade 9 or 10) that is 2 years or more retarded in reading is

0 - 10% __32.1
11 - 20% __32.2
21 - 30% __32.3
31 - 40% __32.4
41 - 50% __32.5
51 - 60% __32.6
61 - 70% __32.7
71% or more __32.8

33. The school's student population is

Fewer than 1000 __33.1
1000 - 1499 __33.2
1500 - 1999 __33.3
2000 - 2499 __33.4
2500 - 2999 __33.5
3000 - 3499 __33.6
3500 - 3999 __33.7
4000 - 4499 __33.8
4500 or more __33.9

Section G: Instructional Program

8-11. Based upon the upper four years of secondary schooling, regardless of the grade organization of your school, are the following stated as minimum requirements for graduation?

	YES	NO
Four years of English or its equivalent	___ 8.1	___ 8.2
Three years of social-behavioral sciences (history and/or social studies)	___ 9.1	___ 9.2
One year of mathematics	___10.1	___10.2
One year of science	___11.1	___11.2

12. Included in your school's graduation requirements based upon a four year program, are there at least SEVEN options for free electives or program variables for each student, excluding physical education?

Yes ___12.1
No ___12.2

13. Is the curriculum so organized that students can move from one program of studies to another without major difficulty, e.g., commerical studies to total academic?

Yes ___13.1
No ___13.2

14-19. Listed below are factors that might be taken into consideration in the grouping of students for instructional purposes. In the spaces to the lower right, please indicate the three factors that are most frequently used in your school.

1. Chronological age of student
2. Judgment of previous teachers
3. Marks in previous program of studies
4. Parental preferences
5. Success or failure in specific previous courses
6. Scores on achievement test
7. Scores on verbal ability or reading tests
8. Social maturity of student
9. Vocational objective of student
10. Other factor: please specify___________

Enter no. from above list	Most frequent	14-15.___
	Second	16-17.___
	Third	18-19.___

20. Remedial language arts skills training is offered for tenth graders?

Yes ___20.1
No ___20.2

21. If remedial language arts skills training is offered for tenth graders, what percentage of the tenth grade is enrolled?

Not offered at any grade level __21.1
Offered, but not at grade ten __21.2
0 - 10% grade ten enrolled __21.3
11 - 20% grade ten enrolled __21.4
21 - 30% grade ten enrolled __21.5
31 - 40% grade ten enrolled __21.6
41 - 50% grade ten enrolled __21.7
51% or more grade ten enrolled __21.8

22. Is "advanced" or "honors" English offered at your school? Is it offered for tenth graders? If so, what percentage of the tenth grade is enrolled?

Not offered at any grade level __22.1
Offered, but not at grade ten __22.2
0 - 10% grade ten enrolled __22.3
11 - 20% grade ten enrolled __22.4
21 - 30% grade ten enrolled __22.5
31 - 40% grade ten enrolled __22.6
41 - 50% grade ten enrolled __22.7
51% or more grade ten enrolled __22.8

23-35. Which of the following foreign languages are offered in your school?

	YES	NO
Chinese	__23.1	__23.2
French	__24.1	__24.2
German	__25.1	__25.2
Hebrew	__26.1	__26.2
Italian	__27.1	__27.2
Latin	__28.1	__28.2
Polish	__29.1	__29.2
Russian	__30.1	__30.2
Spanish	__31.1	__31.2
Swahili	__32.1	__32.2
Other:		
Specify____________		33.1
____________		34.1
____________		35.1

36. How many different foreign languages are offered at the first year or beginning level?

None __36.1
One __36.2
Two __36.3
Three __36.4
Four __36.5
Five or more __36.6

37. How many different foreign languages are offered at the fourth year of high competency level?

None ___37.1
One ___37.2
Two ___37.3
Three ___37.4
Four ___37.5
Five or more ___37.6

38. What percentage of students in an average graduating class successfully complete the fourth year or high competency level of a foreign language?

0 - 5% ___38.1
6 - 10% ___38.2
11 - 20% ___38.3
21 - 30% ___38.4
31 - 40% ___38.5
41 - 50% ___38.6
51% or more ___38.7

39. Is physical education for the physically disabled offered at your school? If so, what percentage of the student body is enrolled?

Not offered at this school ___39.1
0 - 5% of students enrolled ___39.2
6 - 10% of students enrolled ___39.3
11 - 15% of students enrolled ___39.4
16 - 20% of students enrolled ___39.5
21% or more students enrolled ___39.6

40. Is instruction in English as a second language offered at your school? Is it offered for tenth graders? If so, what percentage of tenth graders is enrolled?

Not offered at any grade level ___40.1
Offered, but not at grade ten ___40.2
0 - 5% grade ten enrolled ___40.3
6 - 10% grade ten enrolled ___40.4
11 - 20% grade ten enrolled ___40.5
21 - 30% grade ten enrolled ___40.6
31 - 40% grade ten enrolled ___40.7
41 - 50% grade ten enrolled ___40.8
51% or more grade ten enrolled ___40.9

41. Is an acceleration program in cooperation with local colleges and universities offered in your school -- not advanced placement courses? If so, what percentage of students in an average graduating class receive college credit while still in high school?

Not offered at this school ___41.1
0 - 5% ___41.2
6 - 10% ___41.3
11 - 15% ___41.4
16 - 20% ___41.5
21 - 25% ___41.6
26% or more ___41.7

42. Do capable students perform in an organized tutorial program in some role similar to that of a teacher aide either in individual or small group situations? If so, what percentage of the student body participate as tutors for students in your school?

Not provided in this school __42.1
0 - 3% __42.2
4 - 6% __42.3
7 - 10% __42.4
11% or more __42.5

43. Are students in your school enrolled in an Upward Bound program? If so, what percentage of the student body is enrolled?

No such program exists __43.1
0 - 3% __43.2
4 - 6% __43.3
7 - 10% __43.4
11% or more __43.5

44. To what extent does the instructional program include materials (textbooks, films, etc.) that reflect the cultural backgrounds and the environmental context of various ethnic and cultural groups that clearly exist in the American society?

Little, if any __44.1
In a few special courses __44.2
In many different courses __44.3
Somewhat in most courses __44.4
In practically all courses __44.5

45-46. Generally speaking, the curriculum is organized in one of two ways: (1) by separate subjects, or (2) by broad fields which include several subjects, e.g., separate courses in history and geography vs. social studies classes combining history and geography; separate classes in art, music and literature vs. humanities classes.

What is the trend of practice in your school? Check ONE reply for EACH five year period.

	During past five years	Expected during next five years
a. Changes chiefly in the direction of singling out distinct subjects from broad fields	__45.1	__46.1
b. Changes chiefly in the direction of combining separate subjects into broad fields	__45.2	__46.2
c. No marked changes in either direction	__45.3	__46.3

47-48. In classroom instruction the teacher may provide direct experiences or relate to students' experiences and then move towards abstract generalizations (inductive) or he may begin with the abstract statements of the subject matter and attempt to relate the content to the daily lives of the students.

What is the trend in instructional strategies in your school? Give ONE reply for EACH five year period.

	During past five years	Expected during next five years
a. Changes chiefly in the direction of starting with daily life experiences or direct experiences organized by the school	__47.1	__48.1
b. Changes chiefly in the direction of starting with abstract statements that are related to personal experiences of students	__47.2	__48.2
c. No marked changes in either direction	__47.3	__48.3

49. Regardless of the strategy or the notion with which the teacher begins instruction, to what extent do teachers effectively relate abstract statements of subject matter to the personal experiences of students?

Most teachers effectively relate subject matter and personal experiences of students __49.1

The majority of teachers do so effectively __49.2

Only some teachers do so effectively __49.3

Most teachers do not do so effectively __49.4

50. Are cooperative work experience programs, jointly sponsored by the school and local businesses, offered at your school? If so, what percentage of the eleventh and twelfth grade students participate?

Program not offered __50.1
0 - 5% __50.2
6 - 10% __50.3
11 - 15% __50.4
16 - 20% __50.5
21 - 25% __50.6
26% or more __50.7

51-56. Is occupational education for job entry skills in the following areas offered at your school?

	YES	NO
Agriculture/horticulture	___51.1	___51.2
Business/commerical	___52.1	___52.2
Distributive occupations	___53.1	___53.2
Industrial occupations	___54.1	___54.2
Health	___55.1	___55.2
Home Economics	___56.1	___56.2

57. The percentage of students in grades eleven and twelve participating in the occupational education program is

0 - 10%	___57.1
11 - 20%	___57.2
21 - 30%	___57.3
31 - 40%	___57.4
41 - 50%	___57.5
51 - 60%	___57.6
61 - 70%	___57.7
71 - 80%	___57.8
81% or more	___57.9

58-67. Given the specific current student population of your school, what priority do the following goals have with respect to the allocation of time, physical and human resources? Please use the following code for responses.

1 = Receives primary attention in this school
2 = Receives more than average attention
3 = Receives average attention
4 = Receives less than average attention
5 = Receives almost no attention

	+		+		-	
	+	+	-	--	--	
Adaptability to a changing world	1	2	3	4	5	58.___
Development of cultural appreciations, e.g., nature, music, drama, architecture	1	2	3	4	5	59.___
Development of sound moral and spiritual values	1	2	3	4	5	60.___
Development of positive self-concept and a facility for good human relations	1	2	3	4	5	61.___
Acquisition of basic skills, e.g., reading, writing, computing	1	2	3	4	5	62.___
Understanding the values inherent in the American way of life	1	2	3	4	5	63.___
Physical fitness	1	2	3	4	5	64.___
Acquisition of basic knowledge	1	2	3	4	5	65.___
Development of the skills and practice of critical intellectual inquiry	1	2	3	4	5	66.___
Training in the technical skills to run the country and/or development of appropriate talents, e.g., engineering, scientific, industrial	1	2	3	4	5	67.___

68. To what extent has the set of priorities for your school changed within the past five years?

To a very great extent	___68.1
To a great extent	___68.2
To some extent	___68.3
Very little or not much	___68.4
Almost not at all	___68.5

Section F: Student Activity Program

8. Is a democratic student government organization operational at your school? If so, what is the basis upon which council-assembly membership is decided?

Student government not operational at this school __8.1
Council composed of officials of other student organizations __8.2
Council members elected by homerooms or similar organizational units __8.3
Council members elected at-large by total school __8.4
Council members elected by grade levels __8.5
Council members appointed by selection committee __8.6
Council members neither elected nor appointed __8.7
Other: please specify_______________________________ __8.8

9-19. To what extent are the following types of activities offered and to what extent are they under the direction of students? Please use the following code for responses.

1 = Not provided in student activity program
2 = Provided in program but not under student direction
3 = Extensive program under student direction
4 = Moderate program under student direction
5 = Limited program under student direction

Non-interscholastic sports, intramurals	1	2	3	4	5	9.___
Forums, symposia, debates	1	2	3	4	5	10.___
Social events	1	2	3	4	5	11.___
Awards, competitions	1	2	3	4	5	12.___
Assembly programs	1	2	3	4	5	13.___
Club activities, interest groups	1	2	3	4	5	14.___
Service projects benefitting students	1	2	3	4	5	15.___
Service projects benefitting community	1	2	3	4	5	16.___
Publications	1	2	3	4	5	17.___
Selective, honor organizations	1	2	3	4	5	18.___
Grade-level cabinets/councils	1	2	3	4	5	19.___

20. What percentage of the total student body participates in at least one aspect of the student activity program?

0 - 10% __20.1
11 - 30% __20.2
31 - 50% __20.3
51 - 70% __20.4
71% or more __20.5

21. Participation in student activities by students who are economically disadvantaged ($2000-$3000 annual family income or comparable criteria) is

Greater than that by students with higher family income __21.1
About the same __21.2
Less than that by students with higher family income __21.3

22-31. During the past two school years, has there been a conflict situation involving two or more groups (students-school officials) with opposing points of view that required resolution?

Yes	__22.1
No	__22.2

If "yes" which of the following factors were involved?
If "no" which of the following factors do you anticipate as probable if such a situation should develop?

	YES	NO
Physical confrontation among students in the school	__23.1	__23.2
Physical confrontation between students and some member of the school staff	__24.1	__24.2
Moderate damage to physical facilities of the school	__25.1	__25.2
Disruption of the school's instruction program for half a school day or more	__26.1	__26.2
Student strike or other form of refusal to enter classrooms for instruction	__27.1	__27.2
Picketing or protest marches during the school day	__28.1	__28.2
Support of students by more than one member of the school staff in a role other than conciliatory	__29.1	__29.2
Participation/involvement by more than one-half of the student body	__30.1	__30.2
Support of students by adults other than parents	__31.1	__31.2

32-40. If student activism has been evident, what were the concerns or issues expressed by students in the conflict situation? If conflict has not been evident, what do you anticipate as probable concerns or issues. Please use the following code for responses.

1 = Not a student expressed concern/issue or not anticipated
2 = A primary concern/issue expressed by students or anticipated
3 = A secondary concern/issue expressed by students or anticipated

National social policy: Vietnam war, poverty, unemployment	1	2	3	32.___
Special non-academic provisions for ethnic/minority groups: soul food, Black lounges, Malcolm X memorial	1	2	3	33.___
Dress-appearance codes: hair length, African, mini-skirts	1	2	3	34.___
Speech and press: underground publications, arm bands, buttons, censorship	1	2	3	35.___
Teaching and learning process: "racist" teachers, tracking, classroom formalities	1	2	3	36.___
Curriculum content: sex education, Swahili, Black studies	1	2	3	37.___
Student personnel services: detention halls, guidance services, regulations for tardiness	1	2	3	38.___
Student relationships: white cheerleaders, segregated social events	1	2	3	39.___
Ideology: Black is Beautiful, America is militaristic, white racism	1	2	3	40.___

41-55. If student unrest/activism has been evident, what were the responses in the situation and what was the realized effect of each?

If student unrest has not been evident, what responses do you anticipate as being appropriate and what effect do you believe such actions will have in contributing to the resolution of conflict? Please use the following code for your responses.

1 = Not involved in our situation or not anticipated
2 = Significant positive effect in resolving conflict realized or anticipated
3 = Neutral effect in resolving conflict realized or anticipated
4 = Significant negative effect in resolving conflict realized or anticipated

	0	+	±	−	
Special police assistance for schools grounds/ facilities requested and/or assigned	1	2	3	4	41.___
Large group assembly of students initiated by school officials	1	2	3	4	42.___
Formal meetings between student representatives and prinicpal or his delegated representatives	1	2	3	4	43.___
Formal meetings between student representatives and superintendent or delegated central office personnel	1	2	3	4	44.___
Mutually acceptable signed statement/agreement between students and school officials	1	2	3	4	45.___
Suspension of one or more involved students	1	2	3	4	46.___
Formal civil charges filed against one or more students	1	2	3	4	47.___
Creation of new channel of communication involving students and school staff	1	2	3	4	48.___
Resignation and/or reassignment of one or more members of local school staff	1	2	3	4	49.___
Reassignment of students to other programs and/or other schools	1	2	3	4	50.___
Small group student-faculty discussions	1	2	3	4	51.___
Court suit filed against school officials	1	2	3	4	52.___
New school regulations and/or student personnel procedures	1	2	3	4	53.___
New course offering(s) and/or significant curriculum modification/revisions	1	2	3	4	54.___
Increased direct discussions between community adults and school officials	1	2	3	4	55.___

56. To what extent do student organizations aid in maintaining order and discipline in school and at school-sponsored activities?

Student organizations a great help __56.1
Provide average assistance and meet with moderate success __56.2
Attempt to help, but relatively ineffective __56.3
Offer little or no help __56.4

Section I: School-Community Relations

8-14. To what extent are lay people from the community involved in activities conducted by the school? Please use the following code.

1 = Very frequently or frequently
2 = Sometimes
3 = Never or almost never

	+	+ -	-	
Over-all educational planning for this school	1	2	3	8.___
Advisers for special instructional programs (cooperative work experience, vocational)	1	2	3	9.___
Planning and/or supervising supplementary educational experiences for students	1	2	3	10.___
Over-all evaluation of this school's program	1	2	3	11.___
Planning and/or supervising aspects of this school's student activity program	1	2	3	12.___
Occupational information/planning conferences	1	2	3	13.___
Career development programs involving teaching assistance with increasing responsibilities	1	2	3	14.___

15. Civic and community organizations utilize the school as a meeting place for entertainment, recreation, special meetings

Not at all __15.1
Several times a year __15.2
About once a month __15.3
Several times a month __15.4
At least once a week __15.5

16. The attendance at parent-teacher functions concerned with the program of this school by parents of students with below-average school records is

Less than that of parents of students with average or above-average records __16.1
About the same as that of parents of students with average or above-average records __16.2
More than that of parents of students with average or above-average records __16.3

17. The attendance at parent-teacher functions of parents who are seriously economically disadvantaged ($2000-$3000 annual income or comparable criteria) is

Less than that of parents with additional income __17.1
About the same as that of parents with additional income __17.2
More than that of parents with additional income __17.3

18. How many local staff members are designated to a school-community liaison role? (Consider only compensated time in terms of full-time equivalents.)

None __18.1
One __18.2
Two __18.3
Three __18.4
Four __18.5
Five or more __18.6

19-32. Various means may be used for communications between schools and their communities. What means are available to your school? Which ones are used and what is the effectiveness of their use? Please use the following code for your responses.

1 = Unavailable or not existing
2 = Available, but not currently used
3 = Used with significant positive effect
4 = Used with moderate or questionable positive effect
5 = Used with probable or definite negative effect

Local radio	1	2	3	4	5	19.___
Local television	1	2	3	4	5	20.___
Local and/or general newspapers	1	2	3	4	5	21.___
Materials prepared and published by school personnel	1	2	3	4	5	22.___
Personal contacts on school site initiated by school personnel	1	2	3	4	5	23.___
Personal contacts off school site	1	2	3	4	5	24.___
Personal contacts off school site by students	1	2	3	4	5	25.___
Publications by students	1	2	3	4	5	26.___
Community laymen at faculty discussions	1	2	3	4	5	27.___
Vocationally oriented study trips into the community	1	2	3	4	5	28.___
Culturally oriented study trips into the community	1	2	3	4	5	29.___
Large group assemblies involving representatives of community	1	2	3	4	5	30.___
Community resource persons invited into classrooms	1	2	3	4	5	31.___
Other please specify________________	1	2	3	4	5	32.___

33. The percentage of the school staff holding active membership in at least one community organization with some interest in the school or the community's activities for youth education, other than the PTA or Home-School Association, is

0 - 5% __33.1
6 - 10% __33.2
11 - 15% __33.3
16 - 20% __33.4
21% or more __33.5

Section J: Cultural Enrichment

8-9. During the 1967-68 school year, the percentage of students participating in

	0-10%	11-20%	21-30%	31-40%	41-50%	51%+	
Vocationally oriented study trips	1	2	3	4	5	6	8.___
Culturally oriented study trips	1	2	3	4	5	6	9.___

10-11. The percentage of all those students coming from seriously economically disadvantaged homes ($2000-$3000 annual income or comparable criteria) taking the

	0-10%	11-20%	21-30%	31-40%	41-50%	51%+	
Vocationally oriented study trips	1	2	3	4	5	6	10.___
Culturally oriented study trips	1	2	3	4	5	6	11.___

12-14. During the 1967-68 school year, the number of

	None	0-5	6-10	11-15	16-20	21+	
Interschool student programs held	1	2	3	4	5	6	12.___
Culturally oriented assemblies held	1	2	3	4	5	6	13.___
Community resource people contributing to student programs	1	2	3	4	5	6	14.___

Section K School Physical Facilities

8. The physical facilities (buildings and grounds) in terms of the district's financial ability are

Below the district's reasonable expectation ___8.1
Commensurate with district's reasonable expectation ___8.2
Above the district's reasonable expectation ___8.3

9. Assuming reasonable efficient use, existing physical facilities in terms of educational activities for students and the local community are

Severely inadequate for an appropriate program ___9.1
Inadequate for an appropriate program ___9.2
Adequate for an appropriate program ___9.3
More than adequate for an appropriate program ___9.4

10. To what extent has your school been constrained during the past five years in designing innovative educational programs due to the inflexibility and/or inadequacy of physical facilities?

Constrained to a great or very great degree ___10.1
Constrained somewhat but not to a great degree ___10.2
Constrained little, if at all ___10.3

11. What percentage of the current student body can be seated in the largest auditorium area?

0 - 20% ___11.1
21 - 40% ___11.2
41 - 60% ___11.3
61 - 80% ___11.4
81 -100% ___11.5

12-23. To what extent are specialized instructional facilities adequate to provide needed program for interested students? Please use the following code for your responses.

1 = Severely inadequate for an appropriate program
2 = Inadequate for an appropriate program
3 = Adequate
4 = More than adequate

	− −	−	+	+ +	
Manual and/or industrial arts	1	2	3	4	12.___
Vocational/occupational programs	1	2	3	4	13.___
Science	1	2	3	4	14.___
Home economics/family living	1	2	3	4	15.___
Music	1	2	3	4	16.___
Art	1	2	3	4	17.___
Communication arts and skills	1	2	3	4	18.___
Mathematics	1	2	3	4	19.___
Foreign Languages	1	2	3	4	20.___
Social and behavioral sciences	1	2	3	4	21.___
Other:___________________	1	2	3	4	22.___
Other:___________________	1	2	3	4	23.

24. Vandalism to the school plant by students and by other persons is

Insignificant	__24.1
One of several important problems relating to physical facilities	__24.2
A major problem	__24.3

25. General maintenance of the school building and grounds is

Inadequate	__25.1
Adequate	__25.2
Commendable	__25.3

26. What is the relation between stated student capacity of physical facilities for a single school session and the current enrollment?

Enrollment is less than stated capacity	__26.1
Enrollment exceeds capacity by fewer than 100 students	__26.2
Enrollment exceeds capacity by 101 to 500 students	__26.3
Enrollment exceeds capacity by 501 to 1000 students	__26.4
Enrollment exceeds capacity by 1001 to 1500 students	__26.5
Enrollment exceeds capacity by more than 1501 students	__26.6

27. In terms of the number of students and institutions involved, to what extent are specialized facilities (physical and human) of other local institutions (private and governmental) made available and used for the implementation of the school's educational program?

None at all	__27.1
Very little use	__27.2
Some use	__27.3
Considerable use	__27.4
Very great use	__27.5

Section L: Instructional and Organizational Practices

8-39. Many urban secondary schools are developing new practices in an attempt to improve the effectiveness of the schools. Listed below are some of those practices. A brief definition of each practice is provided on pages L-3 to L-4. For each practice, please indicate the extent to which the practice has been given some attention within your own school, by using the alternative responses defined below.

1. IN USE - fully implemented as a regular feature of the program or currently being used on a trial or pilot basis
2. PLANS - definite plans have been made for implementation, including allocation of materials and/or personnel
3. UNDER STUDY - currently or recently considered in terms of feasibility by an officially designated group within the school
4. REJECTED - study has been completed and a decision not to implement the practice has been made
5. DROPPED - practice discontinued after a trial or pilot project
6. UNKNOWN: NOT CONSIDERED - practice is unknown or was never considered seriously

Teaching teams	1	2	3	4	5	8.___
Humanities course	1	2	3	4	5	9.___
Television instruction	1	2	3	4	5	10.___
Programmed instruction	1	2	3	4	5	11.___
Teaching machines	1	2	3	4	5	12.___
Language laboratory	1	2	3	4	5	13.___
Telephone amplification	1	2	3	4	5	14.___
Simulation or gaming	1	2	3	4	5	15.___
Non-graded programs	1	2	3	4	5	16.___
Bilingual education	1	2	3	4	5	17.___
Continuous progress	1	2	3	4	5	18.___
Directed study	1	2	3	4	5	19.___
Independent study	1	2	3	4	5	20.___
Flexible scheduling	1	2	3	4	5	21.___
Back-to-back scheduling	1	2	3	4	5	22.___
Instructional materials center	1	2	3	4	5	23.___
Resource center	1	2	3	4	5	24.___
Honor study hall	1	2	3	4	5	25.___
School-within-school	1	2	3	4	5	26.___
Optional attendance	1	2	3	4	5	27.___
Adult literacy courses	1	2	3	4	5	28.___
Maternity program	1	2	3	4	5	29.___
Community cultural center	1	2	3	4	5	30.___
Expanded summer school	1	2	3	4	5	31.___
Pre-service program	1	2	3	4	5	32.___
In-service program	1	2	3	4	5	33.___
Expanded guidance services	1	2	3	4	5	34.___
Breakfast program	1	2	3	4	5	35.___
School-community liaison	1	2	3	4	5	36.___
Parent handbook	1	2	3	4	5	37.___
Parent counseling	1	2	3	4	5	38.___
Tutoring program	1	2	3	4	5	39.___

40-45. Of the practices listed on the preceding page, which do you believe to be of most significance in terms of their potential for the effective education of students in your school? Please specify by giving the identification number to the right of the item.

Greatest potential __40-41.__
Second most promising __42-43.__
Third most promising __44-45.__

Newer educational practices are designed as solutions to problems in specific situations. While some of these may gain a certain amount of visibility and currency, they may not be appropriate to a large number of schools that exist in different contexts.

If you and your staff have developed promising new approaches which the above terms fail to describe adequately, would you briefly describe the nature and purpose of those practices so that they may be included in this study of urban high schools. Any practice listed will not be identified with your school unless specific permission is requested in writing.

DEFINITIONS

Teaching teams: course under the direction of two or more teachers, all of whom participate in planning and meeting the class sessions

Humanities course: required or elective course given for at least a semester's credit involving some combination of art, music, leterature, philosophy, history

Television instruction: students view open or closed circuit TV regularly as basic instructional process for completing a course for credit

Programmed instruction: students, independently or as groups, used programmed texts without machines for completing course for credit

Teaching machines: a mechanical device involving programmed material arranged in minute steps with immediate feedback as to correctness of response

Language laboratory: any device used to present recorded voices as part of the audio-lingual approach to learning language

Telephone amplification: discussions held by students with persons away from school via telephone with supplementary amplification

Simulation or gaming: any device used to create a problematical situation, whether realistic or logical, involving students in strategy and decision-making

Non-graded programs: series of courses open to all students with interest and potential for success without regard to grade level of student and/or sequence of courses

Bilingual education: some courses other than a language course in which instruction is offered in English and/or another language

Continuous progress: students within course work at own pace with long term completion date through pre-designed units of study including various materials. Course may or may not have prescribed final completion date

Directed study: students complete work for credit independent of group task but under supervision of a specific teacher with whom student meets at least once a week

Independent study: student initiates work on a topic of interest and uses available resources, but consults with teachers only when needed

Flexible scheduling: scheduled courses meet for various periods of time during different segments of the day and with student groups of significantly different s

Back-to-back scheduling: students in two different subjects scheduled in sequential periods to foster cooperative teaching among teachers of different subjects

Instructional materials center: extensive library collection complemented by a wide variety of audio-visual materials for direct student use, not limited to one or a few substantive areas

Resource centers: specialized center with learning materials specifically selected in terms of relevance to one or several substantive areas, usually with adult staff who provide assistance.

Honor study halls: study halls without adult supervision, but may involve student monitors

School-within-school: for administrative, guidance, and/or instructional purposes, students and faculty are organized into smaller than total school units

Optional attendance: selected students are permitted to decide if they will attend a given session of a particular scheduled class

Adult literacy course: special courses offered in the school for parents to learn the use of the English language

Maternity programs: students who are expectant mothers are given instruction in the care of infants and the maintenance of self

Community cultural center: school provides administrative and organizational leadership in the development of a program of general interest to community citizen

Expanded summer school: opportunities are provided for enrichment as well as remedial work during the summer months

Pre-service program: school provides special pre-service orientation for teachers new to the school to familiarize them with the environmental context

In-service program: local school provides workshops and conferences focussing on specific concerns of the school and its community

Expanded guidance services: supplemented guidance staff to provide counseling, vocation guidance, job placement, and coordinated referral system

Breakfast program: early morning food available to students at minimal or no cost

School-community liaison: resident(s) of the community is employed in a non-credentialed position to facilitate communication between parents and the school

Parent handbook: school provides for parents a booklet that describes and interprets the activities, programs, and procedures specifically in terms of what is expected of parents

Parent counseling: specially trained counselor responsible for initiating contacts with parents and for providing special meetings designed to increase parents' understanding and concern for the child's success

Tutoring program: special academic assistance provided within the school by peers, near peers or adults other than the credentialed teachers

APPENDIX E

SURVEY OF PRINCIPALS:

COVER LETTER AND QUESTIONNAIRES

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH 605 West 115th Street

The enclosed questionnaire is part of a larger study of educational innovations. The purpose of the study is to identify the key factors that facilitate or hinder the adoption of innovations in urban high schools. This research is being carried out by a team of sociologists at Columbia University with the support of the Office of Education.

As you may recall, during the 1968-69 school year as principal of High School you completed a questionnaire sent to you by Dr. Robert J. Havighurst of the National Association of Secondary School Principals. To make optimum use of the data collected in that study we are asking you to complete this supplemental questionnaire.

Every item in the questionnaire refers to the 1968-69 school year. Although we realize that some of the information requested may be hard to recall, we trust that you will be able to complete most of the questionnaire. If for any reason you cannot complete a particular item, please jot a note in the margin alongside it.

We have made the questionnaire as short as possible because we do not want to add unduly to your already busy schedule. We hope that we can count on your taking part in this study.

Sincerely,

Margaret K. Nelson
Project Director

1. All information is confidential. The results will be published only in statistical form.

2. Most questions can be answered by a check-mark or number. If you wish to explain your responses, jot your comments in the margin.

3. When completed, please return the questionnaire in the enclosed envelope.

SECTION A

1. On the average, how many official meetings (requiring the attendance of principals) did the central administration of your school system call per month during the 1968-69 school year?

12/1 [ ] less than one
2 [ ] 1
3 [ ] 2
4 [ ] 3
5 [ ] 4
6 [ ] more than 4

2. On the average, how frequently did you hold formal meetings with your teaching faculty during the 1968-69 school year?

13/1 [ ] once every two months or less
2 [ ] about every six weeks
3 [ ] about once a month
4 [ ] about twice a month
5 [ ] about three times a month
6 [ ] about four times a month
7 [ ] more than four times a month

3. From the following list, please indicate the three topics most frequently discussed in these meetings. (Write in the appropriate letters in the spaces below.)

a student discipline
b teachers' instructional problems
c curriculum revisions
d new teaching techniques
e distribution of supplies
f school maintenance
g drug abuse among students
h teachers' schedules
i student protest and demonstrations
j other (please specify) ____________________

14/ ____1
15/ ____2
16/ ____3

4. On the average, how frequently did you hold formal meetings with your administrative staff during the 1968-69 school year?

20/1 [ ] once a month or less
2 [ ] about twice a month
3 [ ] about three times a month
4 [ ] about four times a month
5 [ ] more than four times a month

5. Please indicate below how many (if any) individuals filled each of the following administrative positions in your school during the 1968-69 school year.

	Number of Individuals	
Assistant Principal - Administrative services	_____	21/
Assistant Principal - Educational services	_____	22/
Dean	_____	23/
Guidance Counselor	_____	24/
Curriculum Coordinator	_____	25/
Department Chairman	_____	26/
Other (Please specify)		
______________________________	_____	27/
______________________________	_____	28/
______________________________	_____	29/

6. Principals of schools often perform a variety of roles. From the following list, please check the six activities to which you devoted the most time during the 1968-69 school year.

In the second column, please indicate the six activities which you most enjoyed and to which you would have liked to have devoted more time.

	Devoted most time (1)	Would like to devote more time (2)	
Dealing with the instructional problems of teachers	☐	☐	30/
Evaluating teachers	☐	☐	31/
Communicating with the central administration	☐	☐	32/
Public relations for the school	☐	☐	33/
Supervising school maintenance	☐	☐	34/
Inventory control	☐	☐	35/
Selecting school staff	☐	☐	36/
Student discipline	☐	☐	37/
Informal contact with students	☐	☐	38/
Advising students on course programs	☐	☐	39/
Testing and examination program	☐	☐	40/
Counseling students	☐	☐	41/
Scheduling	☐	☐	42/
Attendance records	☐	☐	43/
Long-range planning for the instructional program	☐	☐	44/
Conferring with parents	☐	☐	45/
In-service programs for teachers	☐	☐	46/
Student activities	☐	☐	47/
Budget control	☐	☐	48/
Teaching	☐	☐	49/
Collective bargaining with Teachers' Union	☐	☐	50/
Handling student protest	☐	☐	51/
Handling teacher protest	☐	☐	52/
Other ______________________	☐	☐	53/

7. During the 1968-69 school year, to what extent were you free to allocate money budgeted for your school?

56/1 ☐ I had no freedom; all money was earmarked for specific purposes by the central administration.
2 ☐ I had very little freedom; most money was earmarked for specific purposes by the central administration.
3 ☐ I had a moderate degree of freedom; some money was left unspecified to be spent as I saw fit.
4 ☐ I had almost complete freedom; the allocation of the budget was left to the prinicpal's discretion.

8. In general, how would you characterize the amount of freedom you had in determining the major educational policies for your school during the 1968-69 school year?

57/1 ☐ I had very little freedom; the central administration made all major decisions.
2 ☐ I was free to present ideas but final decision rested with the central administration.
3 ☐ I made most important policy decisions without the assistance of the central administration.

9. Which of the following statements most closely characerizes the situation regarding communication with the central administration of your school district during the 1968-69 school year?

58/1 ☐ Easy and satisfactory
2 ☐ Occasionally difficult
3 ☐ Frequently difficult
4 ☐ Always difficult

10. Was it your impression that the central administration of your school district was aware of the specific problems and concerns of your school?

59/1 ☐ Yes, in some detail
2 ☐ Yes, but not in detail
3 ☐ Not generally
4 ☐ Not at all

Please try to answer the next three questions as you would have during the 1968-69 school year.

11. Suppose your school budget had been increased by $50,000 during the 1968-69 school year. How would you have most liked to have seen this money spent?

60/

12. Suppose the central administration of your school district suggested that you make the final decision whether or not to adopt an innovation which seemed relevant to the needs of your schoo, but which past research had shown to be about 50% effective and about which there had been much community debate. What would be your response to the situation? (Check as many as apply.)

62/1 ☐ Postpone decision until more research had been completed
2 ☐ Introduce the innovation on a trial basis
3 ☐ Postpone action until the community climate improved
4 ☐ Seek the advice of other staff members
5 ☐ Hold a community meeting to discuss the innovation
6 ☐ Attempt to find out more about the program from others
7 ☐ Other (Please specify) ______________________________

13. A better than average teacher comes to you and requests permission to introduce a curriculum which would markedly change the course he/she has been teaching. How would you handle the request? (Check as many as apply.)

65/1 ☐ Select a committee to look into the proposed change
2 ☐ Present the request to a faculty meeting for discussion
3 ☐ Discuss the change with the teacher and make your own decision
4 ☐ Allow the teacher to institute any change on a trial basis
5 ☐ Try to dissaude the teacher
6 ☐ Refer the issue to the central administration for approval
7 ☐ Refer the issue to the appropriate department chairman
8 ☐ Other (Please specify) ______________________________

14. We would like to know something about the decision-making process in the school of which you were principal during the 1968-69 school year. Please indicate, using the code below, how decisions relating to the following areas of school policy were made. (Write in the appropriate number.)

1. Decision made at the central adminstration level without the principal's involvement; i.e., policy handed down.
2. Decision made at the central administration level with principals called in for consultation and suggestions.
3. Decision made by principals but with the approval of the central administration, or under central administration guidelines.
4. Decision made by principals without the approval of the central administration.
5. Decision made by individual teachers and department chairmen without the approval of the principal.

68/ ____ Selection and hiring of teaching staff
____ Student discipline procedures
____ Decisions regarding the content of specific courses
____ Purchase of new equipment
____ Total school budget
____ Decision to introduce a major new teaching technique
____ Student dress and hair regulations
____ Diploma requirements
____ Decision to introduce a new course
____ Decision to take students on a field trip
____ Classroom teaching techniques
____ Decision to assign homework regularly

15. Below you will find a list of educational innovations which were in effect in your school (or for which definite plans had been made for implementation) as of the 1968-69 school year. Please indicate those innovations introduced (or planned) during your term as principal of the school.

Introduced while Principal (1)	Introduced Before (2)	Don't Remember (3)

SECTION E

We would like to know something about your career in the field of education.

1. For how many years had you been principal of the high school mentioned on the cover as of (and including) the 1968-69 school year?

   40/ ____ (Please write in actual number of years.)

2. Before the 1968-69 school year, did you ever hold any other position in that high school?

   43/1 [ ] Yes
   2 [ ] No

   IF YES, please write in the title of any other position(s) you held and the number of years you were so employed.

	Position		Number of years
44/	____________________	46/	__________
	____________________		__________
	____________________		__________

3. Before the 1968-69 school year, did you ever hold any position in a different school in the same school district as the high school mentioned on the cover?

   49/1 [ ] Yes
   2 [ ] No

   IF YES, please write in the title of any other position(s) you held and the number of years you were so employed.

	Position		Number of years
50/	____________________	52/	__________
	____________________		__________
	____________________		__________

4. Before the 1968-69 school year were you ever employed in any capacity in any other school system?

   55/1 [ ] Yes
   2 [ ] No

   IF YES, please write in the title of any position(s) you held and the number of years you were so employed.

	Position		Number of years
56/	____________________	58/	__________
	____________________		__________

5. How are you presently employed? (Check one.)

60/1 ☐ Principal of the same school as in 1968-69
2 ☐ Principal of another school in that school district
3 ☐ Principal of a different school
4 ☐ Other position in the field of education
(What?) ______________________________
5 ☐ Other occupation (What?) ______________________________

SECTION C

Please complete the following section.

1. Current age: ____ years 8/

2. Sex: 1 ☐ Male 2 ☐ Female 11/

3. What was your father's occupation while you were growing up?

12/1 ☐ teacher or other educator
2 ☐ professional, semi-professional
3 ☐ proprietor, manager, executive
4 ☐ clerical, sales
5 ☐ skilled
6 ☐ semi-skilled
7 ☐ laborer
8 ☐ farmer or farm manager
9 ☐ unemployed

4. How much formal education did your parents have?

	Father 14/	Mother 15/
1 none	☐	☐
2 some elementary school	☐	☐
3 finished elementary school	☐	☐
4 some high school	☐	☐
5 finished high school	☐	☐
6 some college	☐	☐
7 graduated from college	☐	☐
8 some post-graduate work (M.A., etc.)	☐	☐
9 received a doctoral degree	☐	☐

5. In what type of a community did you spend the major part of your youth?

16/1 ☐ farm
2 ☐ small town
3 ☐ small city
4 ☐ large city
5 ☐ other (specify) ______________________________

6. What type of institution did you attend for most of your undergraduate education?

17/1 ☐ Twp-year junior college
2 ☐ two or three-year normal school
3 ☐ Four-year teachers college
4 ☐ Teacher preparation unit of a university
5 ☐ Other unit of a university
6 ☐ Liberal arts college (not part of a university)
7 ☐ Other (Please specify) ______________________

7. Did you have any graduate training before 1968?

18/1 ☐ Yes
2 ☐ No

IF YES, did you receive most of your graduate training in a school or department of education or in some other division of the university?

19/1 ☐ School or department of education
2 ☐ Other division (which?) ______________________

8. What was your major field of concentration? ______________________ 20/1

9. What degrees did you hold in 1968? ______________________ 21/1

10. Since the 1968-69 school year, have you had any additional formal education?

23/1 ☐ Yes
2 ☐ No

IF YES, what type of education have you had?

24/1 ☐ I have taken courses, but not towards a specific degree
2 ☐ I have worked towards a Master Degree
3 ☐ I have completed work for a Masters Degree
4 ☐ I have worked towards a Doctorate
5 ☐ I have completed work for a Doctorate

THANK YOU VERY MUCH FOR YOUR COOPERATION

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH
605 West 115th Street

Some time ago we mailed you a questionnaire and asked that you fill it out and return it to us. Many of your colleagues have already compled with this request, but according to our records, we have as yet received no reply from you.

First, let us freely admit this seeming imposition on your time and good nature. But, in the same spirit, let us assure you that the cause is not trivial. The views of every member of our sample are required to give representativeness to this study of educational innovations. Its results will be used to identify the key factors that facilitate or hinder the adoption of innovations in urban high schools, and will be made available to educators throughout the country by the U.S. Office of Education.

In case you mislaid your earlier questionnaire, a duplicate is enclosed. We would like to remind you that every item in the questionnaire refers to the 1968-69 school year and the high school of which you were principal at that time,

If you have already returned our questionnaire, please disregard this letter and accept our thanks for your cooperation.

Sincerely,

Margaret K. Nelson
Project Director

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH
605 West 115th Street

Dear

Some time ago we sent you a questionnaire about the 1968-69 school year in High School. Since we have not received your questionnaire, we would appreciate your answering the questions below so that we can determine the representativeness of those who did return questionnaires. A self-addressed, stamped envelope is enclosed for your convenience. Thank you very much..

1. For how many years had you been principal of the High School mentioned above as of (and including) the 1968-69 school year?

   ____

2. Age: ______ 3. Sex: ______

4. What degrees did you hold in 1968? ______________________________

5. How are you presently employed? (Check one)

   ☐ Principal of the same school as in 1968-69
   ☐ Principal of another school in that school system
   ☐ Principal in another school system
   ☐ Other position in the field of education
   (What?) ______________________________
   ☐ Other occupation (What?) ________________________
   ☐ Retired

6. Would you please tell us why you were unable to complete the questionnaire?

   ☐ Didn't have time to answer the questionnaire
   ☐ Couldn't obtain and/or remember the necessary information
   ☐ Disapprove of questionnaires
   ☐ Other (What?)

   ____

THANK YOU FOR YOUR COOPERATION

APPENDIX C

SURVEY OF SUPERINTENDENTS:
COVER LETTER AND QUESTIONNAIRE

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH 605 West 115th Street

During the 1968-69 school year your school system participated in a study of urban high schools conducted by the National Assocaition of Secondary School Principals under the direction of Robert J. Havighurst. The data collected at that time, drawn from forty-four urban school systems, is presently being analyzed by a team of sociologists at Columbia University with support from the Office of Education. The purpose of the study is to identify the key factors that facilitate or hinder the adoption of educational innovations. To make optimum use of the NASSP data we are asking you to help us obtain some additional information.

There are two brief questionnaires enclosed. One of them is to be filled out by the individual who was superintendent of the School System during the 1968-69 school year. If this individual is not longer working for the school system, we would appreciate having it forwarded to his present address. The second questionnaire (which requests factual information about the 1968-69 school year) may be completed by anyone presently employed in the Central Office of the school system.

We understand that questionnaires are an inconvenience and have therefore made both as short as possible. We hope that we can count on your taking part in this study and we will be glad to send you a copy of our final report. If there are any problems or questions, please do not hesitate to write or call us.

Sincerely,

Margaret K. Nelson
Project Director

1. All information is confidential. The results will be published only in statistical form.

2. Most questions can be answered by a check-mark or number. If you wish to explain your responses, jot your comments in the margin.

3. When completed, please return the questionnaire in the enclosed envelope.

SECTION A

We would first like to know something about your career in the field of education.

1. For how many years had you been superintendent of the school system mentioned on the cover as of (and including) the 1968-69 school year?

13/ ____ (please write in actual number of years)

2. Before the 1968-69 school year, did you ever hold any other position in that school system?

16/1 ☐ Yes
2 ☐ No

IF YES, please write in the title of any other position(s) you held and the number of years you were so employed.

	Position		Number of Years
17/	______________________	19/	__________
	______________________		__________
	______________________		__________
	______________________		__________

3. Before the 1968-69 school year were you ever employed in any capacity in another school system?

22/1 ☐ Yes
2 ☐ No

IF YES, please write in the title of any position(s) you held and the number of years you were so employed.

	Position		Number of Years
23/	______________________	25/	__________
	______________________		__________

4. How are you presently employed? (Check one)

28/1 ☐ Superintendent of the same school system as in 1968-69.
2 ☐ Superintendent of a different school system.
3 ☐ Other position in the field of education. (What?) ______________________
4 ☐ Other occupation (What?) ______________________

SECTION B

Please complete the following section.

1. Current age ____ years

2. Sex 1 ☐ Male 2 ☐ Female

3. What was your father's occupation while you were growing up?

33/1 ☐ teacher or other educator
2 ☐ professional; semi-professional
3 ☐ proprietor, manager, executive
4 ☐ clerical, sales
5 ☐ skilled
6 ☐ semi-skilled
7 ☐ laborer
8 ☐ farmer or farm manager
9 ☐ unemployed

4. How much formal education did your parents have?

		Father 35/	Mother 36/
1	none		
2	some elementary school		
3	finished elementary school		
4	some high school		
5	finished high school		
6	some college		
7	graduated from college		
8	some post-graduate work (M.A., etc.)		
9	received a doctoral degree		

5. In what type of a community did you spend the major part of your youth?

37/1 ☐ farm
2 ☐ small town
3 ☐ small city
4 ☐ large city
5 ☐ other (specify) ______________________

6. What type of institution did you attend for most of your undergraduate education? (Check only one.)

38/1 [ ] Two-year junior college
2 [ ] Two or three-year normal school
3 [ ] Four-year teachers college
4 [ ] Teacher preparation unit of a university
5 [ ] Other unit of a university
6 [ ] Liberal arts college (not part of a university)
7 [ ] Other (Please specify) ________________________________

7. Did you have any graduate training before 1968?

38/1 [ ] Yes
2 [ ] No

IF YES, did you receive most of your graduate training in a school or department of education or in some other division of the university?

39/1 [ ] School or department of education
2 [ ] Other division (which?) ____________________________

8. What was your major field of concentration? ____________________________ 40/

9. What degrees did you hold in 1968? ____________________________________ 41/

10. Since the 1968-69 school year have you had any additional formal education?

43/1 [ ] Yes
2 [ ] No

IF YES, what type of education have you had?

44/1 [ ] I have taken course, but not towards a specific degree
2 [ ] I have worked towards a Masters Degree
3 [ ] I have completed work for a Masters Degree
4 [ ] I have worked towards a Doctorate
5 [ ] I have completed work for a Doctorate

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX D

CENTRAL OFFICE SURVEY: QUESTIONNAIRE

If any of the information requested on the following pages is available in published form, we will be glad to purchase the necessary publications. Please send bills to:

Margaret K. Nelson
Project Director
Bureau of Applied Social Research
605 West 115th Street
New York, New York 10025

1. Were the teachers in the school system represented by a teachers' union during the 1968-69 school year?

____ YES
____ NO

2. Were any high schools in the school system desegregated through a ruling from the Central Office or by Court Order prior to or during the 1968-69 school year?

____ YES
____ NO

IF YES, please list their names:

____

____

____

3. Was the Central Office of the school system divided into a number of smaller district offices (i.e., decentralizaed) prior to or during the 1968-69 school year?

____ YES
____ NO

IF YES, please use the space below to state the number of District Offices and the range of responsibilities accorded them.

4. a) What was the total High School budget during the 1968-69 school year?

$\$$______________________

b) Please explain on what basis the total budget was distributed among the various high schools in the school system.

c) Please attach any available additional information about the 1968-69 budgets for the high schools. We would especially appreciate information about grants (Government or Private) for the purpose of introducing new educational programs.

5. In the space below, please list the titles of the administrative positions in the Central Office or attach a sheet with an organizational chart.

Name of person
completing questionnaire:

____

____
(Title)

THANK YOU FOR YOUR COOPERATION

APPENDIX E

SURVEY OF JUDGES:

COVER LETTER AND RATING FORM

Columbia University in the City of New York | *New York, N.Y. 10025*

BUREAU OF APPLIED SOCIAL RESEARCH

605 West 115th Street

April 26, 1973

The enclosed rating forms, forwarded to you by Dr. John Henry Martin, are part of a study being conducted at Columbia University with support from the Office of Education. The purpose of the study is to identify the key factors that facilitate or hinder the adoption of innovations in urban high schools. The major part of the data on which this study is based was collected during the 1968-69 school year by the National Association of Secondary School Principals under the direction of Dr. Robert J. Havighurst. Questionnaires were mailed to 700 high school principals in forty four major cities. The questionnaires included brief definitions of thirty-two innovations and inquired whether they had been adopted in the school or whether they were under consideration. The definitions of the innovations, as they were presented to the principals, are reproduced with the rating forms.

The principals' questionnaires provide us with much information about the high schools which will enable us to explore the relationships between the rate at which a school adopts different types of innovations and such variables as organizational complexity, racial makeup of the student body and style of staff leadership.

Of course, not all innovations are of equal value, and the fact that certain innovations are widely adopted does not mean that they are worthwhile or suitable for the schools adopting them. We are concerned, therefore, about measuring the value of these thirty-two innovations as judged by experts, and then determining the extent to which a school adopts innovations which are appropriate in terms of its own organizational needs and the needs of its students. We are asking you as a member of the National Panel on High Schools and Adolescent Education to complete the enclosed rating sheets which are designed to give us your expert judgment on five criteria for each innovation.

If you have any questions about the rating forms or any other aspect of this study, please do not hesitate to write or call us (212-280-2895). Thank you in advance for your cooperation.

Sincerely,

Margaret K. Nelson
Project Director

MKN:MS

QUESTIONNAIRE FOR JUDGES OF INNOVATIONS

Please judge each innovation listed on the attached forms according to the following four criteria:

1) Educational worth or value when properly installed: indicate what you believe to be the educational worth of each innovation from (1) low to (5) high.

2) Administrative or organizational effects: indicate whether you believe the innovation to entail: (1) Major administrative difficulties; (2) Minor difficulty; (3) A positive contribution to administration.

3) Type of student: indicate the type of student for which you feel the innovation is best suited: (1) Below average academically; (2) Average academically; (3) Above average academically.

4) Type of school: indicate the type of school for which you feel the innovation would be best suited using as a basis for determining "complexity" the variety of different courses, programs and specialists already being offered: (1) Low complexity; (2) Medium complexity; (3) High complexity.

5) Extent to which the innovation would be preserved: indicate your estimate of the chances that the innovation would be preserved as designed when implemented in a school: (1) Low chance for preservation, i.e., innovation likely to be "watered down" when implemented; (2) Medium chance for preservation; (3) High chance for preservation as designed.

Brief definitions of each innovation may be found on the pages following the rating forms.

PLEASE CIRCLE THE APPROPRIATE NUMBER
IF YOU CANNOT ANSWER UNDER ANY PARTICULAR CATEGORY, LEAVE BLANK

INNOVATIONS	EDUCATIONAL WORTH					ADMINISTRATIVE			TYPE OF STUDENT				TYPE OF SCHOOL (Complexity)				PRESERVATION		
	LOW		MED.		HIGH	MAJOR	MINOR	NONE	BELOW AVER.	AVER.	ABOVE AVER.	ALL	LOW	MED.	HIGH	ALL	LOW	MED.	HIGH
	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Teaching teams	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Humanities course	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Television instruction	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Programmed instruction	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Teaching machines	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Language laboratory	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Telephone amplification	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Simulation or gaming	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Non-graded programs	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Bilingual education	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Continuous progress	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Directed study	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Independent study	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Flexible scheduling	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Back-to-back scheduling	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Instructional materials center	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3

PLEASE CIRCLE THE APPROPRIATE NUMBER
IF YOU CANNOT ANSWER UNDER ANY PARTICULAR CATEGORY, LEAVE BLANK

INNOVATIONS	EDUCATIONAL WORTH					ADMINISTRATIVE			TYPE OF STUDENT				TYPE OF SCHOOL (Complexity)				PRESERVATION		
	LOW		MED.		HIGH	MAJOR	MINOR	NONE	BELOW AVER.	AVER.	ABOVE AVER.	ALL	LOW	MED.	HIGH	ALL	LOW	MED.	HIGH
	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Resource center	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Honor study hall	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
School-within-school	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Optional attendance	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Adult literacy courses	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Maternity program	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Community cultural center	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Expanded summer school	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Pre-service program	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
In-service program	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Expanded guidance service	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Breakfast program	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
School-community liaison	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Parent handbook	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Parent counseling	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3
Tutoring program	1	2	3	4	5	1	2	3	1	2	3	4	1	2	3	4	1	2	3

APPENDIX F

COMPARISON OF RESPONDENTS AND NON-RESPONDENTS: PRINCIPAL'S QUESTIONNAIRE

COMPARISON OF RESPONDENTS AND NON-RESPONDENTS:

PRINCIPAL'S QUESTIONNAIRE

As we mention in Chapter I, the information about the Principals comes from a survey which was conducted during the 1972-73 school year, four years after the original data was collected. A questionnaire was mailed to each individual who had been a principal in a high school that participated in the original NASSP study. As was anticipated, many of the principals were no longer associated with the same school as four years before, many of them had retired and quite a few were unavailable -- either because the school had no forwarding address or because they were deceased. Three hundred and seventy-seven principals did return full questionnaires (56% of the total population). An additional 101 principals responded to an abbreviated form of the questionnaire which enabled us to do a rough analysis of respondents vs. non-respondents. Obviously, however, we have no way of knowing in what ways the 189 principals who did not respond at all differ from those who responded to either the long or the short questionnaire. Thus our comparison of the respondents and non-respondents does not fully solve the problem of potential bias in our analysis in Chapter VIII.

In Table F.1 we compare the respondents and non-respondents along a number of different dimensions: number of years as principal, age, sex, education and position as of 1972-73. It is in the first and last of these that we find the major differences between the two groups. Those principals who did not respond to our initial survey had, as of the time of the NASSP survey

(1968-69), already served in the school for almost seven years and were less likely to still be there as of 1972-73. Many of them had moved on to other schools or other occupations and over a quarter of them had retired. The same differences would probably emerge -- even more clearly -- among those principals who responded to neither the long nor the short questionnaire. Many of them were retired and could not be located. Thus we assume that our sample is biased towards the younger principals and/or those who remained in the school system for a considerable period of time rather than leaving for other occupations.

TABLE F.1

COMPARISON OF RESPONDENTS AND NON-RESPONDENTS

	RESPONDENTS (Long Questionnaire)	NON-RESPONDENTS (Follow-up Questionnaire)
Mean Number of Years as Principal (as of 1968-69)	5.4	6.9
Mean Age (as of 1968-69)	51	52
Sex		
Male	94%	93%
Female	6	7
	100%	100%
Education Level		
Less than an M.A.	5%	2%
M.A. Degree	81	83
More than an M.A.	14	15
	100%	100%
Position in 1972-73		
Principal of same school as in 1968-69	47%	27%
Principal of different school	16	21
Other Occupation	21	26
Retired	15	26
	100%	100%
N =	(377)	(101)

APPENDIX G

SURVEY OF EXPERTS

SURVEY OF EXPERTS

In the Spring of 1973 a rating form was mailed to 13 judges, members of a national panel on secondary school education, through the office of the panel chairman. By the fall of that year, seven questionnaires had been returned. A follow-up letter brought in two more questionnaires, bringing the total to nine, or approximately 70% of the panel. Three of the remaining four panel members explained their non-response: one panel member responded that he never participated in such surveys; another felt that he was not qualified to judge the innovations; and the third was too ill during that period to devote careful consideration to the questionnaire.

The questionnaire (a copy of which follows this discussion) listed the innovations and asked the judges to rate them along five criteria -- the three discussed in Cahpter II (Quality, Administrative Difficulty, and Durability) and two additional ones which are explained in more detail below (Type of Student and Type of School for which the innovation is most suited).

For the first three items on the questionnaires the responses of the judges were such as to allow us to tabulate the information and employ it in our analysis. By and large, as noted in Chapter II, there was a high degree of consensus for each of the innovations on each of the three criteria of quality, administrative difficulty and durability. The final two items gave us less clear answers. In both cases, an overwhelming response was a fourth option of "all" which did not differentiate among the types of schools or students but indicated that the innovation was equally appropriate for all of them. This means that administrators when trying to select educational innovations which will suit their schools get very little clear guidance from experts as to whether the innovations are, in fact, appropriate. This may be because, in fact, the innovations are "universal" in applicability. It may also indicate that no enough research is done specifying the types of students who receive the greatest benefit from a specific innovation or specifying the type of school which can best handle the change. The problem may also have been in the phrasing of the question -- at least for the item asking for distinctions between the types of schools. Several judges responded that they did not understand the question and left this column blank. The others may well have checked the colum "All" as a way of handling their lack of certainty as to the meaning of the question.

Our reason for asking these two questions was so that we could make judgments about whether schools selected innovations on an informed bases. The lack of any clear indication from the judges make it impossible for us to determine the appropriateness of most of the innovations for the specific schools in which they are used. However, there are some interesting patterns in the response of the judges and these are discussed briefly below.

Looking over the judges' responses to the question of what type of student the innovation would be most uuited for (Table G.1) we can see that in all but two of the cases at least half of the judges checked the category "all" which may indicate that we are not dealing with a group of innovations with only a narrow range of appropriate use. There are also some interesting patterns in the responses of the judges. Innovations which might generally be classed under the heading of "teaching aids" or "mechanical aids" were more likely to be checked as being appropriate for "average" or "below average stu-

TABLE G.1

DISTRIBUTION OF RESPONSES TO QUESTION ON APPROPRIATENESS OF INNOVATIONS FOR TYPES OF STUDENTS

	Type of Student for Which Innovation is Most Suitable				
Innovations	Below Average	Average	Above Average	All	N*
Teaching Teams		1		8	9
Television Instruction	1		2	5	8
Programmed Instruction		3	1	5	9
Teaching Machines	1	3		4	8
Language Laboratory		2	3	5	10
Telephone Amplification		1	2	6	9
Simulation and Gaming		1	1	7	9
Non-graded Program		2	1	7	10
Continuous Progress				8	8
Directed Study	1	1	4	4	10
Independent Study			7	2	9
Flexible Scheduling			1	8	9
Back-to-Back Scheduling		1		7	9
Instructional Material Center				9	9
Resource Center				9	9
School-within-School				9	9
Optional Attendance			7	1	8

*Final column represented the total number of responses. Numbers vary because judges were allowed to make more than one choice and because not all judges made a judgment on each innovation.

dents": teaching machines, programmed instruction and language laboratory. Apparently the judges felt that such instructional techniques would be of more use here than for the "above average" students. Those innovations which were most frequently judged as being of greater value for the "above average" students were innovations which require a commitment on the part of the student and proof that they can be trusted: directed study, independent study and optional attendance. It seems to us that here the judges were responding more to an "image" of what an "above average" student is like (and assuming that they are less likely to abuse the privileges inherent in these innovations), than whether they would actually be of greater educational value to them.

As was true with the judges' ratings on the type of student for which the innovations were most suited, when the judges considered the innovations in terms of type of schools, more often than not, a fair proportion of the judges selected the category "all" (Table G.2). However, a fair number of the judges also selected the category of "high" complexity -- indicating that in their opinion schools which already run a relatively complex program can more successfully and more advantageously introduce new programs. (As we have seen in Chapter VI it is true that the more complex schools do innovate at a higher rate than those which offer a small range of courses.) In any case, it is interesting to note that it is primarily those innovations which would require administrative flexibility with regard to both teachers and students -- e.g., teaching teams, independent study, flexible scheduling, school-within-school -- that the judges felt were most likely to be successful in more complex schools.

TABLE G.2

DISTRIBUTION OF RESPONSES TO QUESTION ON APPROPRIATENESS OF INNOVATIONS FOR TYPES OF SCHOOLS

	Type of School for Which Innovation is Most Suited in Terms of School Complexity				
Innovations	Low	Medium	High	All	N
Teaching Teams		1	4	2	7
Television Instruction		1	2	4	7
Programmed Instruction		2	3	2	7
Teaching Machines		2	3	2	7
Language Laboratory		1	3	3	7
Telephone Amplification			2	5	7
Simulation and Gaming			3	4	7
Non-graded Program	1	2	2	2	7
Continuous Progress	1	1	1	3	6
Directed Study	1		3	3	7
Independent Study	1		4	2	7
Flexible Scheduling		1	4	2	7
Back-to-Back Scheduling		1	2	4	7
Instruction Material Center			2	5	7
Resource Center		1	2	4	7
School-within-School	1	1	4	1	7
Optional Attendance		2	3	2	7

APPENDIX E

SUPPLEMENTARY TABLES

FOR CHAPTER V

TABLE H.1

PERCENT OF SCHOOLS WITH AT LEAST 100 STUDENTS IN EXCESS OF CAPACITY BY RACIAL COMPOSITION

Racial Composition	Percent of Schools with Major Overcrowding (over 100 students in excess of capacity)
WHITE	54% (320)
WHITE INTEGRATED	51% (122)
BLACK INTEGRATED	47% (41)
BLACK	41% (117)

TABLE H.2

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY OVERCROWDING AND RACIAL COMPOSITION

	Overcrowding		
Racial Composition	MINIMAL (100 students or less)	MAJOR (over 100 students in excess)	Percent Difference
WHITE	51% (147)	49% (173)	- 2%
WHITE INTEGRATED	32% (59)	28% (63)	- 4%
BLACK INTEGRATED	59% (22)	42% (19)	-17%
BLACK	37% (69)	54% (48)	+17%

TABLE H.3

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY NUMBER OF SCHOOL SESSIONS

Number of School Sessions	Percent of Schools with High Innovation Rates (5 or more)	N
Single Session	45%	409
Double Session	44%	181

APPENDIX I

SUPPLEMENTARY TABLES

FOR CHAPTER VI

TABLE I.1

PERCENT OF SCHOOLS (ACADEMIC, VOCATIONAL AND COMPREHENSIVE) IN WHICH EACH OF THE INNOVATIONS IS IN USE

Innovations	Academic	Vocational	Comprehensive
Teaching Teams*	39%	9%	44%
Television Instruction	19%	22%	38%
Programmed Instruction	8%	17%	22%
Teaching Machines	20%	10%	17%
Language Laboratory	58%	13%	72%
Telephone Amplification	4%	0%	8%
Simulation or Gaming	19%	20%	26%
Non-graded Programs*	19%	17%	26%
Continuous Progress*	4%	24%	20%
Directed Study**	0%	27%	30%
Independent Study***	8%	10%	32%
Flexible Scheduling	8%	17%	17%
Back-to-Back Scheduling	19%	17%	32%
Instructional Materials Center*	35%	50%	48%
Resource Center*	23%	38%	41%
School-within-School	15%	20%	11%
Optional Attendance*	4%	3%	2%
N =	(24)	(34)	(514)

---

*High Quality Innovations

**Innovations most appropriate with above average students (cf. Appendix G).

***High Quality and appropriate for above average students.

TABLE I.2

SCHOOL SIZE BY SCHOOL FUNCTION

	School Function		
School Size	Academic	Vocational	Comprehensive
SMALL	19%	66%	30%
MEDIUM	44	25	41
LARGE	37	9	29
	100%	100%	100%
N =	(26)	(34)	(514)

TABLE I.3

PERCENT OF COMPREHENSIVE SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY SCHOOL SIZE

School Size	Percent of Schools with High Innovation Rates
SMALL	40% (164)
MEDIUM	51% (227)
LARGE	45% (157)

TABLE I.4

PERCENT OF SCHOOLS WITH ADEQUATE PHYSICAL FACILITIES BY SCHOOL FUNCTION

School Function	Percent of Schools with Adequate Facilities
Academic	33% (26)
Vocational	44% (34)
Comprehensive	48% (514)

TABLE I.5

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADEQUACY OF PHYSICAL FACILITIES AND SCHOOL FUNCTION

	Adequacy of Physical Facilities	
School Function	Inadequate	Adequate
Academic	22% (18)	38% (8)
Vocational	13% (16)	17% (12)
Comprehensive	43% (284)	55% (268)

TABLE I.6

NUMBER OF GRADES BY SCHOOL SIZE

	Number of Grades		
School Size	Two or Three	Four	Five or Six
SMALL	30%	25%	38%
MEDIUM	42	39	47
LARGE	18	36	15
	100%	100%	100%
N =	(262)	(278)	(67)

TABLE I.7

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY SCHOOL SIZE AND NUMBER OF GRADES

	Number of Grades		
School Size	Two or Three	Four	Five or Six
SMALL	41% (77)	37% (67)	44% (25)
MEDIUM	54% (110)	41% (100)	59% (32)
LARGE	50% (69)	39% (93)	55% (9)

TABLE I.2

ITEMS USED TO CREATE PROGRAM COMPLEXITY INDEX

ITEMS	Percent of Schools Including the Item in the Program
G-21. Is remedial language arts skills training offered for tenth graders.	89%
G-22. Is "advanced" or "honors" English offered in your school.	79%
G-36. How many different foreign languages are offered at the first year or beginning level:	
none	6%
one	8%
two	8%
three	17%
four	26%
five or more	16%
G-40. Is instruction in English as a second language offered in your school	22%
G-41. Is an acceleration program in cooperation with local colleges and universities offered in your school.	29%
G-50. Are cooperative work experience programs, jointly sponsored by the school and local businesses, offered at your school.	88%
G-51-56. Is occupational education for job entry skills in the following areas offered at your school:	
agriculture/horticulture	13%
business/commercial	86%
distributive occupations	70%
industrial occupations	66%
health	28%
home economics	53%

TABLE I.9

PROGRAM COMPLEXITY BY ADEQUACY OF PHYSICAL FACILITIES

		Adequacy of Physical Facilities	
Program Complexity		Inadequate	Adequate
LOW (0 to 8)		38%	36%
MEDIUM (9 or 10)		29	35
HIGH (11 or more)		33	29
		100%	100%
	N =	(347)	(313)

TABLE I.10

PERCENT OF SCHOOLS WITH HIGH ADMINISTRATOR-TEACHER RATIO (1:10 OR LESS) BY SIZE

School Size	Percent of Schools with High Administrator-Teacher Ratio
SMALL	41% (169)
MEDIUM	50% (238)
LARGE	49% (162)

TABLE I.11

ADMINISTRATOR-TEACHER RATIO BY SCHOOL FUNCTION

Administrator-Teacher Ratio	School Function Academic	 Vocational	 Comprehensive
HIGH	32%	33%	28%
MEDIUM	31	17	42
LOW	37	50	30
	100%	100%	100%
N =	(16)	(12)	(305)

TABLE I.12

PERCENT OF COMPREHENSIVE SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY ADMINISTRATOR-TEACHER RATIO

Administrator-Teacher Ratio	Percent of Schools with High Innovation Rates
HIGH	57% (85)
MEDIUM	53% (129)
LOW	47% (91)

APPENDIX J

SUPPLEMENTARY TABLES

FOR CHAPTER VII

(Excluding Autonomy Analysis)

TABLE J.1

DISTRIBUTION OF SCHOOLS BY PERCENT OF TEACHING STAFF WITH AT LEAST AN M.A. DEGREE

Percent of Staff with at Least an M.A. Degree	Percent of Schools	Number of Schools
0 - 20%	9%	58
21 - 30%	21	130
31 - 40%	20	127
41 - 50%	21	129
51 - 60%	16	101
61% or more	13	75
	100%	(620)

TABLE J.2

DISTRIBUTION OF SCHOOLS BY MEAN LENGTH OF TEACHING EXPERIENCE

Mean Number of Years of Teaching Experience	Percent of Schools	Number of Schools
4 or less	11%	74
5	10	60
6	14	89
7	14	88
8	19	122
9	14	91
10	6	47
11	4	24
12 or more	5	36
	100%	(639)

TABLE J.3

MEAN LENGTH OF TEACHING EXPERIENCE BY PERCENT OF TEACHING STAFF WITH AT LEAST AN M.A. DEGREE

	Percent of Staff with at Least an M.A. Degree	
Mean Length of Teaching Experience	LOW (0-40%)	HIGH (41% or more)
LOW (0-7 years)	60%	43%
HIGH (8 years or more)	40	57
	100%	100%
N =	(310)	(300)

TABLE J.4

DISTRIBUTION OF SCHOOLS BY TEACHER TURNOVER

Average Yearly Teacher Turnover	Percent of Schools	Number of Schools
0 - 5%	25%	164
6 - 10%	34	223
11 - 15%	22	143
16 - 20%	11	75
21 - 25%	5	36
26 - 30%	2	11
31% or more	1	8
	100%	(660)

TABLE J.5

TEACHER TURNOVER BY RACIAL COMPOSITION

Racial Composition	Percent of Schools with High Teacher Turnover (11% or more)
WHITE	36% (321)
WHITE INTEGRATED	51% (124)
BLACK INTEGRATED	54% (41)
BLACK	45% (119)

TABLE J.6

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER TURNOVER, TEACHER MORALE AND RACIAL COMPOSITION

	TURNOVER			
	Low		High	
	Morale			
Racial Composition	LOW	HIGH	LOW	HIGH
WHITE	43% (16)	45% (190)	44% (27)	64% (88)
WHITE INTEGRATED	* (8)	28% (53)	24% (29)	35% (34)
BLACK INTEGRATED	* (6)	61% (13)	47% (17)	* (5)
BLACK	18% (11)	49% (55)	48% (31)	45% (22)

*There are too few cases on which to base a percentage.

TABLE J.7

RACIAL COMPOSITION OF SCHOOL STAFF
BY RACIAL COMPOSITION OF STUDENT BODY

Staff Racial Composition*	Student Racial Composition WHITE	 WHITE INTEGRATED	 BLACK INTEGRATED	 BLACK
WHITE	99%	93%	65%	8%
WHITE INTEGRATED	1	7	30	34
BLACK INTEGRATED	--	--	5	20
BLACK	--	--	--	38
	100%	100%	100%	100%
N =	(304)	(125)	(40)	(128)

*Staff racial composition is defined in the same manner as student racial composition: White: under 20% Black staff; White Integrated: 20-25% Black staff; Black Integrated: 50-80% Black staff; Black: over 80% Black staff.

APPENDIX K

TEACHING STAFF AUTONOMY: ANALYSIS

TEACHING STAFF AUTONOMY: ANALYSIS

In Chapter VII we discuss the problems surrounding our measure of the autonomy of the teaching staff and our preliminary conclusion that, in fact, there is relatively little autonomy granted to the teachers in urban school systems. Here we would like to pursue the findings that emerged from our rudimentary analysis of autonomy and its relation to innovation as well as to several other teaching staff characteristics.

In Table K.1 we present the entire distribution of schools along the variable as defined in Chapter VII. As we can see, there is very little variation among the schools in our population. In Table K.2 we show the relation of autonomy to the number and quality of innovations adopted in schools. This data indicates that the degree to which teachers are granted autonomy within a school is related in a curvilinear manner to the adoption of innovations. Although the differences are not large, the data suggest that some intermediate level of autonomy engenders the most innovative climate. Perhaps where the teachers have very little autonomy they offer little in terms of suggestions for innovation and, perhaps, when they have a great deal of autonomy, they resist any demands from the administrative staff that they change their teaching techniques.

Degree of autonomy of the teaching staff is more clearly, positively, related to the proportion of innovations of high quality which are adopted in a school. Presumably the staff can act as a good filter if they are given a chance. Teachers may have more reliable instincts about which innovations

TABLE K.1

DISTRIBUTION OF SCHOOLS BY TEACHER AUTONOMY

Teacher Autonomy: Number of Decision Areas for Which Teachers have Responsibility	Percent of Schools	Number of Schools
None	9%	23
1	22	59
2	42	113
3	20	53
4	6	15
5	3	7
	100%	(270)

TABLE K.2

INNOVATION RATE AND PROPORTION OF HIGH QUALITY INNOVATIONS ADOPTED BY TEACHER AUTONOMY

Teacher Autonomy: Number of Decision Areas for Which Teachers have Responsibility	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
LOW (0-1)	49%	4.4	39.7	(82)
MEDIUM (2)	53%	4.9	46.9	(113)
HIGH (3-5)	44%	4.8	47.7	(75)

will work well than administrators who have not recently -- or never -- worked with students directly in a classroom setting.

The frequency with which the principal met with his administrative staff was a variable which helped us understand the distribution of power and authority within a school. Therefore we turn now to the same variable for the teaching staff, anticipating that it will be positively related to innovation as it indicates a greater willingness to explore and discuss ideas. In fact, this is the case although the relationship is quite a weak one. Meetings between teachers and principals are probably less often a forum for the exchange of new ideas than meetings between the administrative staff and the principal (Table K.3).

TABLE K.3

INNOVATION RATES AND PROPORTION OF HIGH QUALITY INNOVATIONS ADOPTED BY FREQUENCY OF TEACHING STAFF MEETINGS

Frequency of Meetings	Percent with High Innovation Rates (5 or more)	Mean Number of Innovations Adopted	Mean Proportion of Quality Innovations Adopted	(N)
INFREQUENT (1 or less a month)	45%	4.3	41.5	(60)
MODERATELY FREQUENT (2 a month)	48%	4.7	46.0	(186)
VERY FREQUENT (3 or more a month)	53%	5.0	45.5	(113)

As we would expect, when the principals grant the teachers more autonomy they are also likely to meet with them more frequently: meetings are necessary to discuss policy when the distribution of authority is less highly centralized (Table K.4). Examining the effects of the two variables (autonomy and frequency of meetings) simultaneously on innovation discloses an interesting finding (Table K.5). Reading vertically we note that although meetings may be more necessary when there is a relatively high degree of autonomy, the frequency with which the principal meets with his teaching staff has a positive relation to innovation only under conditions of low or moderate autonomy. This suggests that when the teachers have not been granted autonomy the meetings are necessary to ensure that the staff has input into the innovation process. Moreover, in these instances where the teachers have low autonomy but the opportunity to interact with the principal and discuss their ideas, the most innovation takes place.

TABLE K.4

FREQUENCY OF MEETINGS BY TEACHER AUTONOMY

	Teacher Autonomy		
Frequency of Meetings	LOW (0-1)	MEDIUM (2)	HIGH (3-5)
INFREQUENT (1 or less a month)	23%	13%	16%
MODERATELY FREQUENT (2 a month)	46	55	58
VERY FREQUENT (3 or more a month)	31	32	26
	100%	100%	100%
N =	(82)	(113)	(75)

TABLE K.5

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY FREQUENCY OF MEETINGS AND TEACHER AUTONOMY

Frequency of Meetings	Teacher Autonomy LOW (0-1)	MEDIUM (2)	HIGH (3-5)
INFREQUENT (1 or less a month)	40% (18)	39% (13)	42% (12)
MODERATELY FREQUENT (2 a month)	47% (38)	51% (63)	44% (43)
VERY FREQUENT (3 or more a month)	57% (26)	62% (37)	45% (20)

There is very little difference in the degree of autonomy granted to teachers in schools by the degree to which the teachers are professional in terms of training or experience. A well-trained or highly experienced staff can no more claim autonomy than a staff lacking these qualifications. However, if we examine the effects of experience and autonomy simultaneously on the innovation rates in the school an interesting finding emerges (Table K.6). Although there are very few cases, the data suggest that it is schools with new teachers and low teacher autonomy which are the most innovative: the new teachers are open to suggestion and because they do not have a major impact on administrative decisions, they offer little resistance. Conversely, it is schools with highly experienced teachers and a high degree of autonomy that are the least innovative: these teachers effectively resist administrative control over their actions and block change.

TABLE K.6

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHING STAFF NUMBER OF YEARS EXPERIENCE AND AUTONOMY

	Mean Number of Years Experience		
Teacher Autonomy: Number of Decision Areas for Which Teachers have Responsibility	LOW (1-5)	MEDIUM (6-8)	HIGH (9 or more)
LOW (0-1)	61% (31)	50% (27)	54% (24)
MEDIUM (2)	50% (44)	57% (37)	53% (32)
HIGH (3-5)	50% (30)	50% (24)	29% (21)

Degree of autonomy granted to teachers differs by the racial composition of the school (Table K.7). The internal decision-making structure of the White schools is most highly decentralized just as the school systems in which they are located are likely to be decentralized. The converse is true of the Black schools: a high degree of centralization at the school system level is mirrored in the internal decision-making structure. Unfortunately there are too few cases for us to fully pursue the relationships between autonomy and innovation within each of the four types of schools (Table K.8). In the White schools the same curvilinear relationship between innovation and autonomy is found as in the entire population. In the White Integrated schools there is a similar relationship although there it is the schools with high teacher autonomy that have considerably lower innovation rates. At present we cannot draw any conclusions from these findings.

TABLE K.7

TEACHER AUTONOMY BY RACIAL COMPOSITION

	Teacher Autonomy				
Racial Composition	LOW (0-1)	MEDIUM (2)	HIGH (3-5)		
WHITE	30%	38	32	100%	(148)
WHITE INTEGRATED	22%	46	32	100%	(48)
BLACK INTEGRATED	29%	68	3	100%	(23)
BLACK	30%	51	19	100%	(41)

TABLE K.8

PERCENT OF SCHOOLS WITH HIGH INNOVATION RATES (5 OR MORE) BY TEACHER AUTONOMY AND RACIAL COMPOSITION

	Teacher Autonomy		
Racial Composition	LOW (0-1)	MEDIUM (2)	HIGH (3-5)
WHITE	48% (48)	57% (49)	49% (51)
WHITE INTEGRATED	36% (11)	41% (22)	13% (15)
BLACK INTEGRATED	* (7)	57% (16)	* (0)
BLACK	54% (13)	52% (21)	* (7)

*There are too few cases on which to base a percentage.